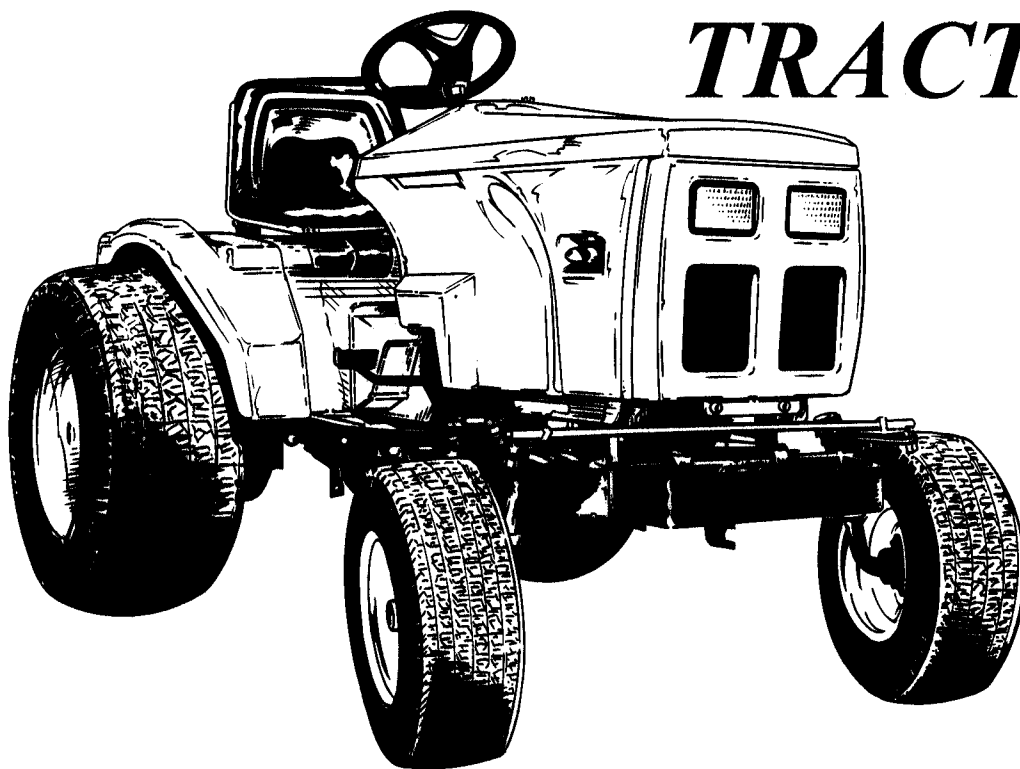


Safety Instructions & Operator's Manual

SNAPPER®

MODEL UGT2060H

GARDEN TRACTOR



Thank you for buying a SNAPPER product!. Before operating the Tractor, read and follow the "IMPORTANT SAFETY INSTRUCTIONS" on the inside of front cover, all other instructions contained in this manual and the accompanying booklet, "About Power Mower Safety". Lawn mowers and all power equipment, can be potentially dangerous if used improperly. **REMEMBER: SAFETY REQUIRES CAREFUL USE IN ACCORDANCE WITH INSTRUCTIONS AND COMMON SENSE.**

SNAPPER® McDonough, GA., 30253 U.S.A.

MANUAL No. 2-8573 (Rev. 1, 5/95)

IMPORTANT SAFETY INSTRUCTIONS

WARNING: This powerful cutting machine is capable of amputating hands and feet and can throw objects that can cause injury and damage! Failure to observe the following **SAFETY** instructions could result in serious injury or death. Carefully read this manual and question your dealer if something is not clear. Should the dealer be unable to answer to your satisfaction, write or call the Customer Service Department at SNAPPER, McDonough, Georgia, 30253 (Phone 404-954-2500).

PROTECTION FOR CHILDREN

1. **DO NOT** allow children in yard when machine is operated (even with the blade OFF).
2. **DO NOT** allow children to ride on machine or on attachments (even with the blade OFF).
3. **DO NOT** allow pre-teenage children to operate machine.
4. Only responsible teenagers with mature judgement shall be allowed to operate machine and only under close supervision.

PROTECTION AGAINST TIPOVERS

1. **DO NOT** operate machine on slopes exceeding 15 degrees (27% grade).
2. On slopes above 10 degrees (18% grade), exercise extreme **CAUTION**. Turn blade OFF when traveling uphill, also reduce speed and avoid sharp turns.
3. Avoid uphill starts. If machine is stopped going uphill, turn blade OFF and back slowly down the slope.
4. **DO NOT** mow under any condition where traction or stability is doubtful without first test driving over the terrain with blade OFF.
5. Stay alert for holes and other hidden hazards. Keep away from ditches, washouts, culverts, fences and protruding objects.
6. **DO NOT** mow back and forth across face of slopes.
7. **KEEP A SAFE DISTANCE** (at least three feet) away from edge of ditches and other drop offs.

OTHER IMPORTANT PRECAUTIONS

1. Read and follow operator's manuals and instructions furnished with attachments.
2. Only mature, responsible persons shall operate the machine.
3. Mount and dismount the machine from left side.
4. Wear appropriate protective clothing when mowing, such as, long pants and substantial footwear, not barefoot or with open sandals.
5. Practice operation of machine with blade OFF to learn controls and develop skill.
6. Persons under the influence of alcohol or drugs must **NOT** operate machine.
7. Know how to **STOP** blade and engine quickly in preparation for emergencies.
8. Keep people and pets a safe distance from machine.
9. Shields, deflectors, switches, blade controls and other safety devices must be in proper position and functional.

OTHER IMPORTANT PRECAUTIONS

10. Clear area to be worked of wire, rocks and other objects that could cause injury if thrown by blade.
11. **STOP** blade, **STOP** engine and remove key when leaving machine.
12. **DO NOT** operate machine unless properly seated with feet on foot rests or pedal.
13. Keep hands and feet away from rotating blade underneath deck. Never place foot on ground while blade is ON or when machine is in motion.
14. Turn blade OFF, **STOP** engine and wait for blade to **STOP** before attempting to unclog grass or leaves to prevent loss of fingers or hand.
15. Blade must be switched OFF except when cutting grass. Set cutter in highest position when mowing over rough ground.
16. Deflector or grass catcher must be in position. Never point discharge at people, passing cars, windows or doors. Watch out for traffic when crossing or near roadways.
17. Operate in reverse only with careful observation of entire area behind the machine. **DO NOT** mow in reverse unless absolutely necessary.
18. Service machine and make adjustments only when engine is stopped.
19. Have machine serviced by an authorized SNAPPER dealer at least once a year and have the dealer install any new **SAFETY** devices.
20. Use only genuine SNAPPER replacement parts to assure that original standards are maintained.
21. Tighten all nuts, bolts and screws frequently, then check, adjust, repair or replace brakes as needed.
22. Lubricate machine at intervals specified in manual to prevent controls from binding.
23. Mow only in daylight or with good artificial light.
24. Handle gasoline with care! Never remove cap while engine is running. Fill tank outdoors only with engine **STOPPED** and cool. Clean spilled gasoline from machine. Store gasoline in approved container, out of the reach of children, in well ventilated, unoccupied building.
25. **DO NOT** change engine governor speed settings or overspeed engine.
26. Check grass catcher components frequently for signs of wear or deterioration and replace as needed to prevent injury from items going through weak or worn spots.
27. Exercise **CAUTION** when pulling loads. Limit loads to those you can safely control and attach loads to hitch plate as specified with SNAPPER attachment instructions.

Introduction

This Owner's Manual provides operational and maintenance instructions for the UT620HV/UGT2060H tractor. The UT620HV/UGT2060H is a twin engine hydrostatic drive garden tractor.

Before operating the tractor...

It is the responsibility of the user to understand and perform proper operating procedures. Read this manual thoroughly and understand the use of the tractor completely before operating the tractor. Be aware of the dangers inherent in the use of this type of product. Read, understand, and follow all DANGER, CAUTION, and WARNING messages both in this manual and on the tractor.

To obtain maximum benefit...

Proper maintenance and service are essential to obtaining the maximum benefit from your tractor. Follow the recommendations provided in this manual. Record the tractor's serial number in the space provided on the next to last page. Keep this manual readily accessible for referencing.

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Important Safety Instructions

Before operating the tractor...

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Important Safety Instructions

WARNING: This powerful machine is capable of amputating hands and feet and can throw objects that can cause injury and damage! Failure to observe the following **SAFETY** instructions could result in serious injury or death. Carefully read this manual and question your Dealer if something is not clear.

Protection for children

1. DO NOT allow children in the area when machine is operated (even with the attachments OFF).
2. DO NOT allow children to ride on machine or on attachments (even with the attachments OFF).
3. DO NOT allow pre-teenage children to operate machine.
4. Only responsible teenagers with mature judgment shall be allowed to operate machine and only under close supervision.

Protection against tipovers

1. DO NOT operate machine on slopes exceeding 15 degrees (27% grade).
2. On slopes above 10 degrees (18% grade) exercise extreme CAUTION. Turn attachments OFF when traveling uphill. Also reduce speed and avoid sharp turns.
3. Avoid uphill starts. If machine is stopped going uphill, turn attachment OFF and back slowly down the slope.
4. DO NOT operate attachments under any condition where traction or stability is doubtful without first test driving over the terrain with attachments OFF.
5. Stay alert for holes and other hidden hazards. Keep away from ditches, washouts, culverts, fences and protruding objects.
6. DO NOT mow back and forth across face of slopes.
7. KEEP A SAFE DISTANCE (at least three feet) away from edge of ditches and other drop offs.

Other Important precautions

1. Read and follow operator's manuals and instructions furnished with attachments.
2. Only mature, responsible persons shall operate the machine.
3. Mount and dismount the machine from left side.
4. Wear appropriate protective clothing when mowing, such as long pants and substantial footwear, not barefoot or with open sandals.
5. Practice operation of machine with attachments OFF to learn controls and develop skill.
6. Persons under the influence of alcohol or drugs must NOT operate machine.
7. Know how to STOP attachments and engine quickly in preparation for emergencies.
8. Keep people and pets a safe distance from machine.
9. Shields, deflectors, switches, blade controls and other safety devices must be in proper position and functional.
10. Clear area to be worked of wire, rocks and other objects that could

cause injury if thrown by blade.

11. STOP attachments, STOP engine and remove key when leaving machine.
12. DO NOT operate machine unless properly seated with feet on footrests or pedal.
13. Keep hands and feet away from rotating blade underneath deck. Never place foot on ground while blade is ON or when machine is in motion.
14. Turn attachments OFF, STOP engine and wait for attachments to STOP before attempting to unclog grass, leaves, or other debris to prevent loss of fingers or hand.
15. Mower blade must be switched OFF except when cutting grass. Set cutter in highest position when mowing over rough ground.
16. Deflector or grass catcher must be in position. Never point discharge at people, passing cars, windows or doors. Watch out for traffic when crossing or near roadways.
17. Operate in reverse only after careful observation of entire area behind the machine. DO NOT mow in reverse unless absolutely necessary.
18. Service machine and make adjustments only when engine is stopped.
19. Have machine serviced by an authorized Dealer at least once a year and have the Dealer install any new SAFETY devices.
20. Use only genuine replacement parts to assure that original standards are maintained.
21. Tighten all nuts, bolts and screws frequently. Then check, adjust, repair or replace brakes as needed.
22. Lubricate machine at intervals specified in manual to prevent controls from binding.
23. Operate machine and attachments only in daylight or with good artificial light.
24. Handle gasoline with care! Never remove cap while engine is running. Fill tank outdoors only with engine STOPPED and cool. Clean spilled gasoline from machine. Store gasoline in approved container, out of the reach of children, in well ventilated, unoccupied building.
25. DO NOT change engine governor speed settings or overspeed engine.
26. Check grass catcher components frequently for signs of wear or deterioration and replace as needed to prevent injury from items going through weak or worn spots.
27. Exercise CAUTION when pulling loads. Limit loads to those you can safely control and attach loads to hitch as specified with attachment instructions.

Tractor Controls

Left-hand and right-hand sides of the tractor are on a person's left and right, respectively, when seated in the tractor facing forward.

forward
↑

left-hand side

right-hand side

2. Steering wheel

4. Ignition switch

10. Parking brake lever

1. Adjustable seat

8. Motion control foot pedal

9. Left-hand brake pedals

9. Right-hand service/parking
brake pedal

7. Fuel cap gauge

5. Choke knob

6. Throttle lever

3. Headlight switch

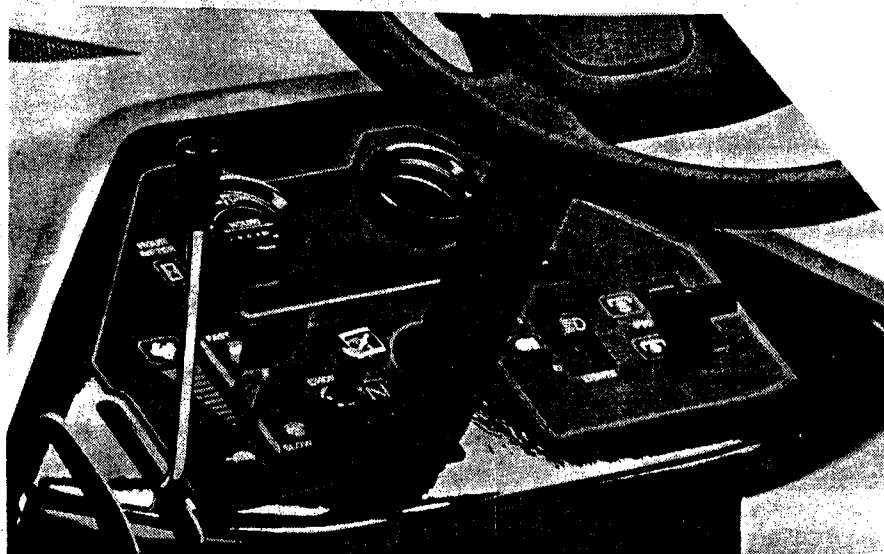


Figure 1. Basic controls.

Tractor Controls

Basic controls

1. **ADJUSTABLE SEAT** – moves forward or back, up to 3" (see Figure 1.).

Loosen two seat knobs on the seat support plate and slide seat assembly to suit. Tighten seat knobs.

2. **STEERING WHEEL** – controls the front wheels of the tractor for steering (see Figure 1.).

3. **HEADLIGHT SWITCH** – controls the tractor's headlights (see Figure 1.).

Push switch to 'I' to turn headlights on. Push switch to 'O' to turn headlights off.

Note: The ignition switch must be "ON" for headlights to light. Headlights go off when ignition switch is turned to the "OFF" position.

4. **IGNITION SWITCH** – starts and stops the engine. This is a 3-position, key-actuated switch (see Figure 1.).

Turn key to the "START" position to start engine. When released, the key automatically returns left to the "ON" position. Turn key left to the "OFF" position to stop engine.

NOTE: Do not crank engine for more than 10 seconds. See "Starting the engine".

5. **CHOKE KNOB** – controls the fuel-air mixture in the engine's carburetor (see Figure 1.).

Pull the knob out when starting the engine. Push it in shortly after engine begins to run. See also "Starting the engine in cold weather".

6. **THROTTLE LEVER** – controls the amount of fuel being fed into the engine (see Figure 1.).

Move upward (toward rabbit) to increase engine speed (rpm). Move downward (toward turtle) to decrease engine speed.

Set lever midway between the fast position and slow position when starting engine.

Throttle speed requirements vary depending on the operation and the attachment being used. See the attachment manual for information. See also "Tractor operation" in this manual.

7. **FUEL CAP and GAUGE** – shows fuel level and unscrews for dispensing of fuel into tank (see Figure 1.). Use only unleaded, minimum octane 87 gasoline.

Always ensure that the small breather hole is not clogged.



WARNING: Gasoline is highly flammable.

Always stop the engine and turn off all electrical systems, including headlights, when dispensing fuel. Dispense fuel outdoors. DO NOT smoke or be near any flames or sparks while dispensing fuel. Replace fuel cap securely after dispensing fuel.

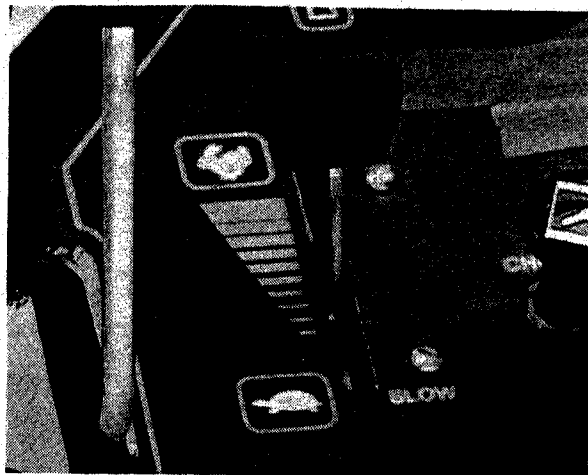


Figure 2. Throttle lever.

Tractor Controls

Basic controls (continued)

8. **MOTION CONTROL FOOT PEDAL** – controls the direction (forward/reverse) and speed of the tractor (see Figure 1.).

The pedal is angled as shown in Figure 3.

To drive forward – gently push on the top of the pedal (with toes) (0 – 7.4 mph).

To back up – gently push on the bottom of the pedal (with heel) (0 – 3 mph).

When released, the pedal automatically returns to the neutral position, stopping the tractor.

9. **THREE BRAKE PEDALS** – control the brakes (see Figure 1.). A single brake pedal is located on the right-hand side and two brake pedals are located on the left-hand side of the tractor.

On the right-hand side of the tractor the **SERVICE/PARKING BRAKE PEDAL** controls both the left and right wheels. Depress this pedal to stop or slow the tractor during normal operating conditions. Also use this pedal to set the parking brake (see **PARKING BRAKE LEVER**).

On the left-hand side the pedals operate independently. The **LEFT PEDAL** controls the left wheel and the **RIGHT PEDAL** controls the right wheel. Depress the pedals individually to assist turning with a heavy load, to make tight turns, or to enhance traction on ice or other poor tractive material.

Always apply brakes gradually.

10. **PARKING BRAKE LEVER** – latches the brake to lock the rear wheels (see Figure 1.).

IMPORTANT: ALWAYS lock the brakes when leaving tractor unattended.

To latch brake – depress service/parking brake pedal (about halfway). While pedal is depressed move lever forward toward front of tractor.

To release brake – depress any brake pedal.

NOTE: When 1) the parking brake is latched, 2) the transmission is in neutral, and 3) the PTO switch is "OFF", the engine will continue running without operator being in seat



Figure 3. Motion control foot pedal, service/parking brake pedal, and parking brake lever.

Tractor Controls

Console gauges

HOURLMETER - tells number of hours the tractor has operated. It runs when ignition switch is "ON." Do not leave ignition "ON" when engine is not running. Use hourmeter as a guide for when to do scheduled maintenance.

PTO LIGHT - lights when EMC/PTO is engaged.

OIL PRESSURE LIGHT - signals low engine oil pressure when lit. It lights momentarily when the ignition switch is "ON", but the engine is not running (e.g., during starting sequence).

CAUTION: The low oil pressure light should go off once the engine is running. If light remains on, shut engine off immediately. Refer to Troubleshooting # 6. Engine will fail if the problem is not resolved.

BATTERY LIGHT - lights when battery is discharging. It lights momentarily during starting sequence. It should be off when the engine is running. If not, shut engine off and find the source of the problem.

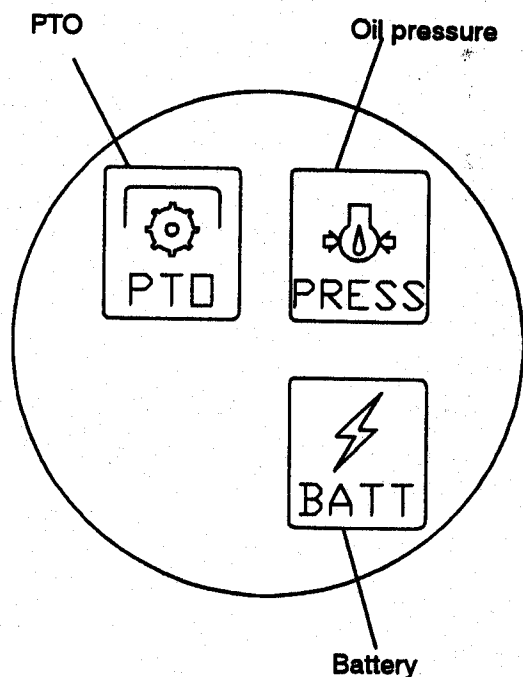
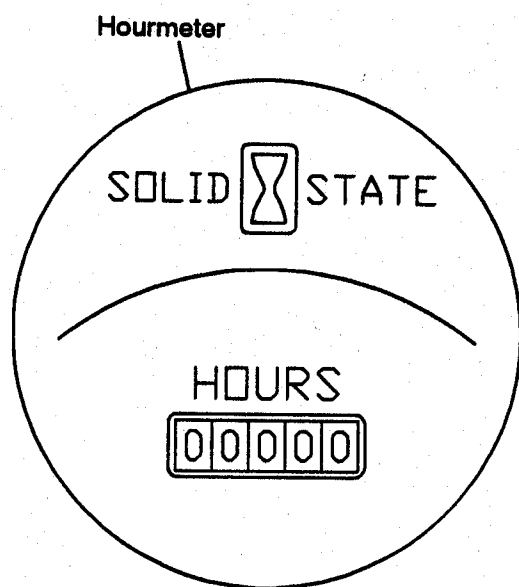


Figure 4. Console gauges.

Tractor Controls

Attachment controls

All rotary attachments are controlled by an EMC/PTO (electromagnetic clutch/power take off) system. All front, middle, and rear attachments are raised and lowered by the standard hydraulic lift system.

IMPORTANT: ALWAYS lower implements fully to the ground when leaving tractor unattended.

Rotary control

PTO SWITCH - starts and stops the electromagnetic clutch (EMC) on the front of the engine for the power take off (PTO). The EMC drives all rotary attachments, such as a mower deck.

To start rotary attachments - pull down, then lift up the PTO switch.

To stop rotary attachments - push the PTO switch down (from lift position).

Hydraulic control

RESTRICTOR VALVE - restricts which attachments are operated. See "TWO HYDRAULIC LIFT CONTROL LEVERS" below. The restrictor valve is located on the right-hand side of the console. It is closed when turned fully in. It is open when turned fully out.

TWO HYDRAULIC LIFT CONTROL LEVERS - turn front attachments or lower/raise front, middle, rear attachments.

RESTRICTOR VALVE CLOSED - Left lever turns front attachment:

To turn the front attachment left - push the left lever forward. When the lever is released, it returns to its center (hold) position. The front attachment "holds" its turned position.

To turn the front attachment right - pull the left lever to the rear. When the lever is released, it returns to its center (hold) position. The front attachment "holds" its turned position.

To float the front attachment left/right (seeks its own best operating position) - push the left lever fully forward, through a slight detent. When the lever is released, it remains in the forward position until pulled out of the detent.

RESTRICTOR VALVE CLOSED - Right lever lowers/raises front attachment:

To lower the front attachment - push the right lever forward. When the lever is released, it returns to its center (hold) position. The front attachment "holds" its lowered position.

To raise the front attachment - pull the right lever to the rear. When the lever is released, it returns to its center (hold) position. The front attachment "holds" its raised position.

To float the front attachment raised/lowered (seek its own best operating level) - push the right lever fully forward, through a slight detent. When the lever is released, it remains in the forward position until pulled out of the detent.

Tractor Controls

Attachment controls (continued)

RESTRICTOR VALVE OPEN - Left lever turns front attachment and lowers/raises rear attachments.

To turn front attachment left and to lower rear attachment - push the left lever forward. When the lever is released, it returns to its center (hold) position. The front attachment "holds" its turned position and the rear attachment "holds" its lowered position.

To turn front attachment right and to raise rear attachment - pull the left lever to the rear. When the lever is released, it returns to its center (hold) position. The front attachment "holds" its turned position and the rear attachment "holds" its raised position.

To float the front attachment left/right and to float rear attachment raised/lowered (seek their own best operating positions) - push the left lever fully forward, through a slight detent. When the lever is released, it remains in the forward position until pulled out of the detent.

RESTRICTOR VALVE OPEN - Right lever lowers/raises front and middle attachments.

To lower the front and middle attachments - push the lever forward. When the lever is released, it returns to its center (hold) position. The front and middle attachments "hold" their lowered positions.

To raise the front and middle attachments - pull the right lever to the rear. When the lever is released, it returns to its center (hold) position. The front and middle attachments "hold" their raised positions.

To float the front and middle attachments raised/lowered (seek their own best operating levels) - push the right lever fully forward, through a slight detent. When the lever is released, it remains in the forward position until pulled out of the detent.

Tractor Controls

Attachment controls (continued)

NOTE: It is recommended that the front attachment be removed prior to operating the middle or rear attachments. Also, before closing the restrictor valve make sure the rear/center attachments are in desired positions.

Left lever

Valve closed

- ↑ front floats left/right
- ↑ front turns left
- front holds turn
- ↓ front turns right

Right lever

- ↑ front floats up/down
- ↑ front lowers
- front holds
- ↓ front raises

Valve open

- ↑ front floats left/right & rear floats up/down
- ↑ front turns left & rear lowers
- front & rear hold
- ↓ front turns right & rear raises

- ↑ front & middle float up/down
- ↑ front & middle lower
- front & middle hold
- ↓ front & middle raise

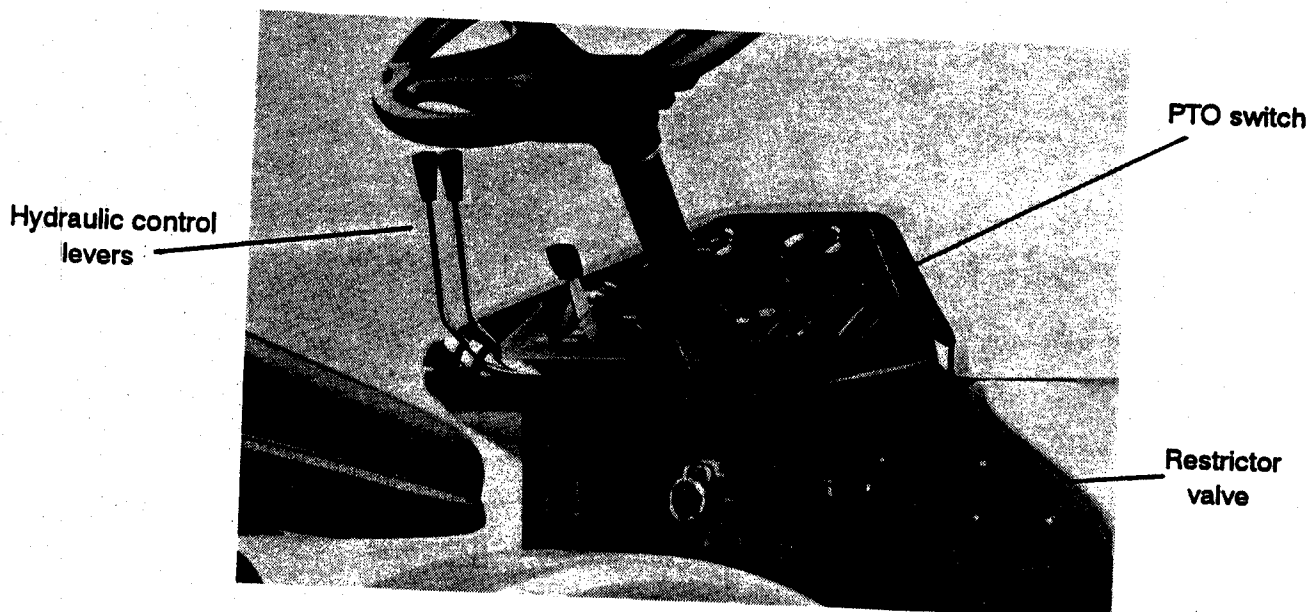


Figure 5. PTO switch, hydraulic control levers, and restrictor valve.

Tractor Operation

IMPORTANT: BEFORE starting or operating the tractor, READ the manuals and UNDERSTAND the operation of all tractor controls and attachments. FOLLOW all safety messages.

While driving the tractor



1. Stay away from ditches, holes, banks and other areas that could cause tractor turnover.
2. Go slowly and use extreme caution on slopes, grades, and rough terrain, when turning around, and when view of the ground is obstructed.
3. When operating on slopes and grades use front and rear wheel weights and low speed ranges.
4. When pulling loads use front wheel weights or front weight rack with counterweights. Use low speed ranges and apply power slowly. Pull from frame mounted towbar only. Do not pull from any other place on the tractor frame.
5. Never dismount until tractor is stopped, all power shut off, and parking brake lever engaged.
6. Never leave the tractor unattended with the engine running.
7. Never leave the ignition key in an unattended tractor.
8. Do not disconnect any safety interlocks. They are provided for the protection of the operator, especially when his or her attention may be momentarily distracted.

Starting the engine

1. Ensure that the fuel shutoff valve on the bottom side of the fuel tank is open (vertical).

NOTE: Safety interlocks prevent the tractor from starting when steps 2, 3, and 4 are not done.

2. Be seated in the tractor.
3. Ensure that the motion control foot pedal is in "NEUTRAL".
4. Make sure EMC/PTO switch is in "OFF" position (down).
5. Pull the choke knob out.
6. Set the throttle lever about halfway between slow (turtle) and fast (rabbit).



CAUTION: To prevent over-heating of the starting motor, limit continuous cranking to 10 seconds. Allow a full 60 second delay before attempting to recrank. If there is a false start, the engine must be completely stopped before making another attempt at starting.

7. Turn the ignition key to "START" and release it immediately after the engine starts. Push choke in halfway.
8. After engine is warm push choke in all the way. Then push throttle lever down until engine just idles.

Starting the engine in cold weather

1. Use lighter oil. See Engine manual for correct oil usage. Do not use starting fluids. Keep the battery fully charged (cranking power is greatly reduced at low temperatures).
2. Follow the procedure for "Starting the engine" except allow the engine to warm up longer before pushing the choke in.

Tractor Operation

Starting the tractor, driving the tractor, and operating attachments



WARNING: Check to be sure that the area around the tractor and attachment, and in the path you intend to travel, is clear of people, pets, and other obstructions.

Tractor ground speed and engine speed requirements vary depending on operating conditions and the attachment being used. Refer to the attachment manual for correct operating speed.

1. If a PTO driven attachment is being used increase engine rpm (push throttle) to half speed. Engage the EMC (turn PTO switch "ON").

After both engine and attachment are running, operate throttle to gradually increase engine rpm up to operating speed. A broom attachment should be operated at about 1/2 throttle. All other attachments should be operated between 3/4 and full throttle.

Engine speed below half throttle is not recommended while PTO driven attachments are engaged. Refer to the attachment manual for recommended operating speed.

2. To put the tractor in motion – use the motion control foot pedal:

To drive forward – slowly depress the top of the pedal (with toes).

To drive backward – slowly depress the bottom of the pedal (with heel).

NOTE: A safety interlock switch stops the engine and attachment if the operator leaves the tractor seat without pushing the PTO switch to "OFF" and locking the brakes.

Brake operation

To lock the brake – depress the service/parking brake pedal. While pedal is depressed, push the service/parking brake lever (all the way) forward into the engaged position.

To release brake – depress the service/parking brake pedal. While the pedal is depressed, push the service/parking brake lever toward the rear of tractor. Slowly release pedal.

IMPORTANT: Always put the tractor in neutral, fully lower the attachments, lock the brake, and remove the key before leaving the tractor.

Tractor Operation

Pushing the tractor by hand – bypass valves

When the tractor is pushed by hand or rolled, the appropriate “FWD” (forward) or “REV” (reverse) bypass valve must be pushed down and held down while the tractor is moving.

Insert a small screwdriver or similar object into the desired actuator hole and depress the valve actuator. Hold down while hand-pushing the tractor.

Towing

Towing the tractor is not recommended. The back wheels must be off the ground or the transmission can be severely damaged. If the tractor must be moved long distances, load it onto a trailer.

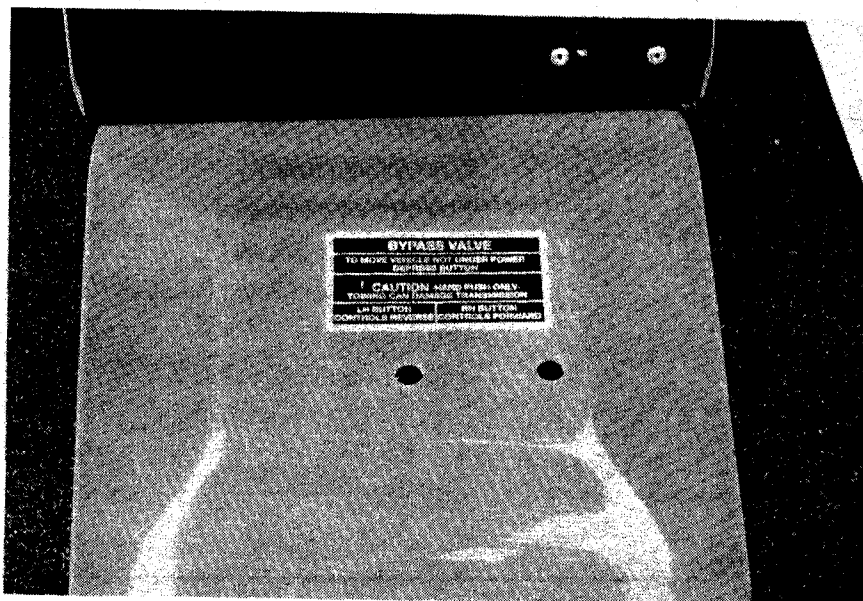


Figure 6. Bypass valves.

Maintenance

General

Maintaining and cleaning the tractor help keep it in prime safety and operating condition. Detailed instructions on how to service the tractor are on the following pages. Perform the maintenance as recommended. For future reference keep a log (on last page) of when maintenance was done.

Maintenance summary

The summary below shows when to service the tractor under normal conditions. The tractor's hourmeter tells the number of hours the tractor has been used. Service may need to be done more frequently, especially under unusual conditions, such as heavy dirt, dust, etc.

Check before every use...

- belts
- engine oil
- fasteners
- fuel level
- guards & shields
- hydraulic oil

Check every 25 hours...

- air cleaner (clean)
- battery
- brakes
- engine cooling fins
- fittings (grease)
- hydraulic hoses & fittings
- tire pressure

Check during and after every use...

- air cleaner
- air intake screens
- hydraulic oil coolers

Check every 100 hours...

- air cleaner (change)
- differential (lube)
- engine air intake/cooling system (clean)
- engine oil & filter (change)
- final drive (lube)
- fuel filter (change)
- fuel screen (clean)
- hydraulic oil filter (change)
- spark plugs
- wheel bearings (pack)

Check after first 5 hours...

- battery
- engine oil & filter (change)
- fittings
- hydraulic oil

Fuel, oils, grease, and lubricants

Battery water . distilled water

Differential lube . . 80/90 gear lube - 2 pints

Engine oil 10W30 year-round above 32° F - 2 qts.
5W30 below 32° F

Final drive lube . . 80/90 gear lube - 1.5 pints each

Fitting grease . lithium based grease

Fuel . . unleaded gasoline, 87 min. octane - 8.25 gals.

Hydraulic oil . . VG 46 or 20W hyd. oil - 2.25 gals.

Where to find detailed maintenance instructions

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Maintenance

Belts

Check the PTO and attachment drive belts periodically for wear, cuts, breaks, and frayed conditions. Replace worn or damaged belts. Clean only with a clean, dry cloth.

For details on replacing the PTO belt refer to "EMC and PTO".

For details on replacing attachment belts refer to the attachment manual.

Body

The side panels, hood, front grille, and rear fender comprise the body. These sections are made of fiber reinforced plastic.

Maintenance and cleaning supplies can be obtained at automotive parts dealers or discount store automotive departments. Replacement parts can be ordered from your Dealer.

Cleaning the body

Keep the tractor free of debris, dirt, and grease. Remove mud, ice, or snow after use to prevent hardening or freezing.

Be sure side screens are clear. Cleaning may help in the discovery of minor difficulties before they become troublesome.

Use only a car wash soap to wash. Never use dish or laundry soap as it will remove wax.

Use a premium paste wax on hood, body, and dash areas every six months in order to maintain a smooth surface finish and color (more frequently in extreme conditions). Use "rubbing" compound to remove small scratches.

Removing the body

In some instances, removal of the body facilitates cleaning, lubrication, and adjustments. Generally, removal is not necessary. If removal is desired follow these steps:

Side panels

1. Raise the hood by pulling it up from the edge that is closest to the steering wheel.
2. Each side panel is secured at the top with two cam-locs. Flip the cam-locs out. Turn them 90°, aligning them with the slots in the side panel. Lift panel off.

Hood

3. The hood is secured to the tractor with two prop rods. Remove the prop rods from the infrastructure by loosening the nuts from the hinge clips. Lift hood, with prop rods attached, from the tractor.

Front grille

4. The front grille is secured to the tractor with screws, washers, and nuts. Loosen these items.
5. Ensure that the right side panel is removed, as explained in steps 1 and 2.
6. Disconnect the headlight wires at the main wiring harness (on right side, near console). Remove screws, washers, and nuts. Carefully remove grille, pulling headlight wires through opening.

Brakes

The tractor is equipped with two individually controlled rear wheel brakes. The brake system was pre-adjusted at the factory for maximum braking efficiency.

The brakes should be checked every 25 hours of tractor operation, or sooner if necessary. The brakes are connected to actuating arms at the rear of the tractor.

Checking

Depress one of the pedals. There should be approximately 1/2" of free travel on the pedal before resistance is encountered. This means the brake bands are tight on the drum.

The pedal may be depressed another three or four inches but this will merely compress the override spring. Little or no additional pressure will be brought to bear on the drum.

Adjusting

When adjustment becomes necessary, the brake for each wheel should be adjusted separately. Refer to Figure 7 and do the following steps:

1. Loosen the nuts (30) located just forward of the clevis (3).
2. Tighten the locking nut (20) located inside the clevis just behind the spring (18) to obtain the desired free travel.
3. Tighten the inner nut just forward of the clevis to compress the spring. The spring should be compressed to approximately 2-1/4" overall length.
4. Tighten the outer nut to the inner nut just forward of the clevis.
5. Follow the same procedure for the brake on the other side of the tractor. Recheck free travel and parking latch engagement.

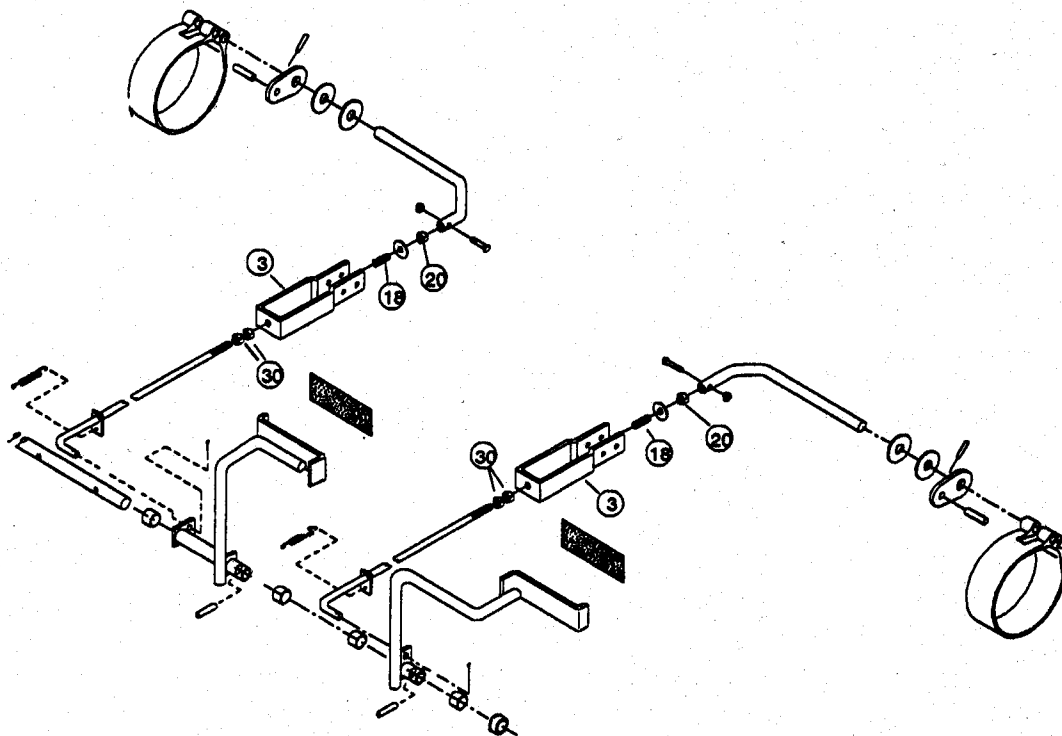


Figure 7. Brake adjustment nuts.

Maintenance

Electrical system



WARNING: Before checking or servicing any part of the electrical system, disconnect the black (negative) battery cable. Disconnect the red (positive) cable. Failure to do so could cause severe burns.

Battery



WARNING: Dangerous Acid, Explosive Gases. DO NOT smoke or light a match near the battery! Hydrogen gas may be present and is explosive. Batteries contain sulfuric acid. Keep batteries and acid out of reach of children. Avoid contact with skin, eyes, and clothing. Flush immediately with water for 15 minutes if acid splashes on skin. Seek medical help.



WARNING: Batteries produce explosive hydrogen gas while being charged. Ventilate the area when charging the battery. Keep cigarettes, sparks, open flame, and other sources of ignition away at all times.



WARNING: Remove all jewelry when working on battery. Failure to do so could result in severe burns.

Checking the battery

The battery should be checked every 25 hours of operation or once a week, whichever is less.

To check the battery:

1. Open hood. The battery is located directly behind console. Disconnect the black (negative) battery cable. Disconnect the red (positive) battery cable.

2. Being VERY CAREFUL not to splash liquid, remove the filler caps.

3. The electrolyte level should be at the bottom of the filler tubes. If the electrolyte is low, add clean distilled water. Do not overfill.

In freezing weather – run the engine briefly after adding water. This mixes the water and electrolyte and prevents freezing.

4. Clean corrosion and dirt from cables, connections, and top of battery. Dirt and corrosion can cause self-discharging of battery. Apply a coat of a corrosion preventative to terminals.

5. Connect the red (positive) battery cable. Connect the black (negative) cable. Tighten battery connections. Keep connections tight at all times to prevent arcing, pitting of connections, and eventual battery failure.

Charging and replacing

If unfamiliar with charging and replacing the battery, refer to the battery or charger instructions.

Battery cables are color-coded. Remember that to:

Remove the cable clamps – black (negative) is first.

Connect the cable clamps – black (negative) is last.

Maintenance

Electrical system (continued)

Connections and wiring

The electrical connections and wiring should be checked at least every 25 hours of tractor operation. Make sure that connections are clean and tight and that wires are not rubbing on anything.

Fuses

If an electrical failure occurs check the fuses. They are located in front of the console on the right side of the tractor.

To check a fuse pull it out of its socket. A fuse is not working if the metal inside is broken. Replace a broken fuse with one that has the same amperage.

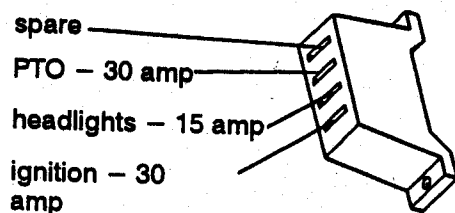


Figure 8. Fuses.

Gauge light bulbs

To replace a light bulb in the console:

1. Open hood. Rotate the black bulb holder 1/4 turn counterclockwise. Pull unit out of opening.
2. Pull bulb out. Replace with bulb of the same type and wattage.
3. Insert unit in opening. Rotate 1/4 turn clockwise to fasten. Close hood.

Headlights

If a headlight needs replacing:

1. Open hood. Remove side panels. Remove front grille, disconnecting headlight wires. (See "Body" for further information.)
2. Rotate the black (bezel) dial 1/4 turn counterclockwise. Pull unit out of opening. Pull bulb out. Replace bulb with one of the same type and wattage. Insert unit in opening. Rotate dial 1/4 turn clockwise to fasten.
3. Reconnect wires. Replace front grille and side panels.

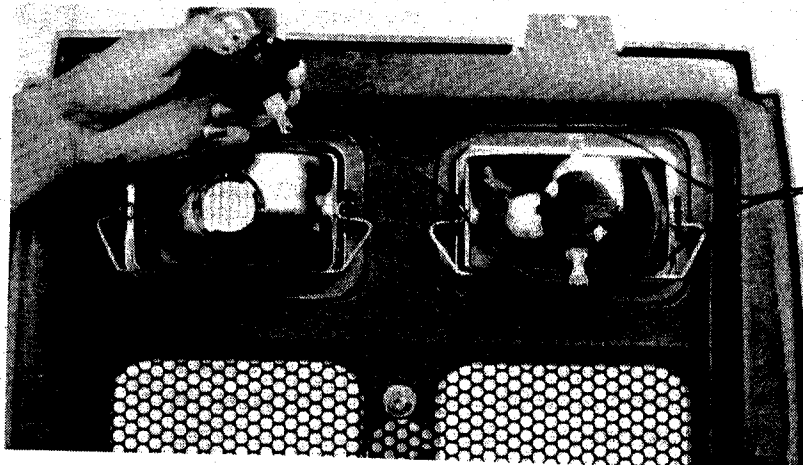


Figure 9. Headlights.

Maintenance

Engine

NOTE: If differences are encountered, the engine manufacturer's Owner's Manual should override this manual.

The three main causes of major engine failure are:

1. No cooling air.
2. No oil or dirty oil.
3. Dirty carburetor air.

The engine is air-cooled. Air is drawn into the area around the engine from the rear by flywheel fins.

To prevent the engine from overheating or burning out, the air filter, air intake screens, and engine cooling fins **must be kept clean and unobstructed at all times.**

Air cleaner

The air cleaner is a porous paper filter with a foam precleaner wrapped around it. It removes dust as air circulates through its surfaces. A clogged air cleaner reduces engine power and leaves unburned fuel in the engine.

The air cleaner should be checked after every use of the tractor. Clean it every 25 hours (sooner if operating in unusual conditions, such as heavy dust, etc.). Replace it every 100 hours.

Checking, cleaning, replacing

To check, clean, replace the air cleaner, refer to Figure 10 and do the following steps:

1. Turn the engine off. Open hood.
2. Locate the square, plastic unit which houses the air cleaner. Unlatch it at the sides or unscrew center thumbscrew. Remove the top. Check bottom plate to be sure it is securely mounted and undamaged.

3. Remove wing nut from air cleaner cover. Remove cover. Remove filter.

4. **Precleaner** - Remove the foam precleaner that is wrapped around the paper air filter. Shake out debris. Wash the precleaner in detergent and water. Rinse, dry, and lightly oil. **DO NOT WASH or OIL the PAPER FILTER.**

5. **Paper filter** - **HANDLE CAREFULLY.** If paper filter is not damaged or not too dirty, gently tap on flat surface to dislodge dirt and debris.

Replace filter if rubber gaskets or paper surface are damaged or very dirty.

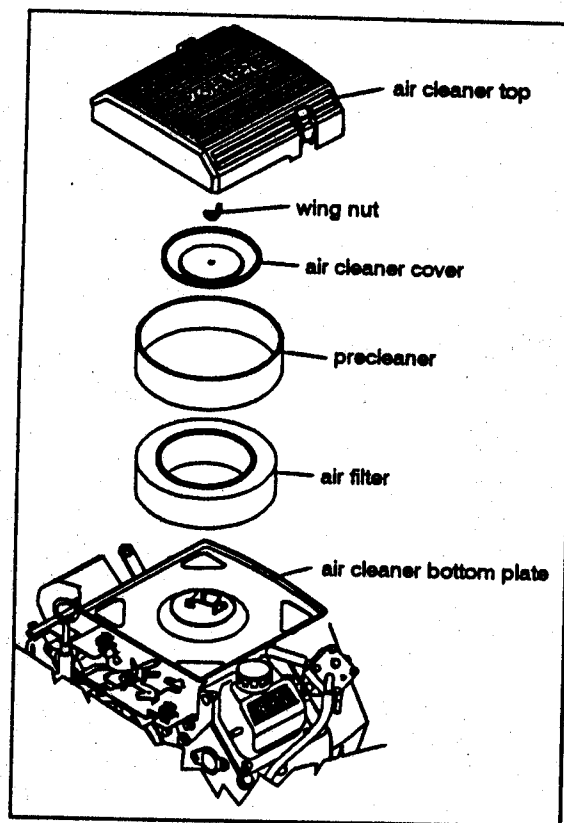



Figure 10. Air cleaner.

Maintenance

Engine (continued)

To ensure proper cooling, the external surfaces of the engine should be kept clean at all times.

 **WARNING:** Operating the engine with blocked screens, dirty or plugged cooling fins, and/or cooling shrouds removed will cause engine damage due to overheating.

Air Intake/cooling system

Every 100 hours of operation (more often under extremely dusty or dirty conditions) do the following steps:

1. Allow the engine to cool. Remove the side panels, hood, front grille, infrastructure, and exhaust duct.
2. Remove the blower housing and other cooling shrouds from around the engine.
3. Clean the cooling fins and other external surfaces of the engine.
4. Make sure the cooling shrouds are reinstalled. Replace exhaust duct, infrastructure, front grille, hood, and side panels.

Air Intake screens

The air intake screens are located on either side of the tractor, near the middle. Check screens after every use. Dirty screens can cause engine to overheat. Check during use if operating in heavy dust or debris.

Cleaning

To clean air intake screens:

1. Remove all debris, grass, etc. that has collected on the screens, blocking the holes.
2. Wipe the screens and rinse with a hose.
3. Clean the insides of the screens when cleaning the engine cooling fins and oil coolers.

Carburetor

Lack of power accompanied by black sooty exhaust smoke usually indicates that the fuel mixture is too rich. A clogged air cleaner can cause the same symptoms. Check the air cleaner first. The carburetor may not need adjustment. Refer to the engine manufacturer's Owner's Manual if adjustment is necessary.

Oil and filter

The engine oil should be checked before every use of the tractor. The oil and filter should be changed after the first five hours of operation and every 100 hours thereafter. Dipstick and oil fill are on top of engine.

Checking oil

To check oil level:

1. Pull dipstick completely out of the crankcase. Wipe off oil. Reinsert dipstick completely.
2. Remove dipstick and read level.

Maintenance

Engine (continued)

Changing oil and filter



CAUTION: Hot engine oil can cause burns.

Hot oil drains more freely and carries away more impurities than cool oil. Either run the engine for about five minutes to thoroughly warm the oil, or drain the oil while the engine is hot. Dispose of oil properly.

To change oil and filter:

1. Remove engine drain plug and filter on left-hand side of tractor. Drain oil into pan.
2. Replace plug and filter. Refill to full (F) mark on dipstick. **DO NOT OVERFILL.** Clean up spilled oil.
3. Start engine. Oil light should go out within 10 seconds. If it does not, turn engine off immediately and refer to "Troubleshooting" in this manual.

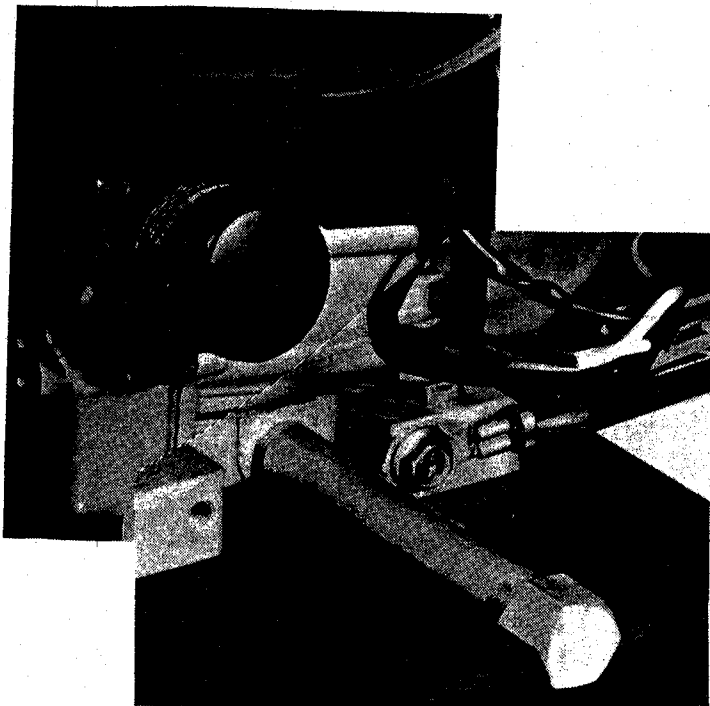


Figure 11. Engine oil filter and drain plug.

Spark plugs

After every 100 hours of use, check the condition of each spark plug and reset the gap. The gap gradually widens as the electrodes wear under normal conditions. To check each plug:



WARNING: Before checking or servicing any part of the electrical system, disconnect the black (negative) battery cable. Disconnect the red (positive) cable. Failure to do so could cause severe burns.

1. Open the hood. Disconnect the black (negative) battery cable. Disconnect the red (positive) cable. Remove the side panels.
2. Disconnect the lead wire from the top of the plug. Clean the area around the plug to prevent dirt from dropping into the engine.
3. Using care not to crack or break ceramic insulation material, remove the spark plug.
4. Check condition of electrodes. If the plug has a light coating of gray or tan, this usually indicates normal conditions.

A white, blistered coating may indicate overheating. A black coating usually comes from operating with an overrich fuel mixture.

5. Do not attempt to service a spark plug that is badly fouled or in poor condition. Replace both plugs when one requires replacement.
6. If the old plug is in good condition, reset the gap to .040 inches.
7. Using a torque wrench, tighten each plug to 18 - 22 ft-lbs.
8. Reconnect lead wires from coil. Replace side panels. Reconnect the red (positive) battery cable. Reconnect the black (negative) cable. Close hood.

Maintenance

Fuel system

The tractor has a fuel screen at the fuel shutoff valve and an in-line fuel filter. They should be cleaned or changed after every 100 hours of use.

When adding fuel use fresh, unleaded gasoline with an octane rating of at least 87.



WARNING: Handle fuel carefully. Always stop the engine and turn off all electrical systems, including the headlights, when servicing the fuel system. Do not permit smoking in the area. Keep flames and sparks away from the area.

Adding fuel

1. Check gauge in fuel tank cap behind seat for fuel remaining in tank.
2. Clean area around the fuel tank cap. Add fuel as required.

DO NOT ADD OIL TO THE GASOLINE. DO NOT USE GASOLINE/ALCOHOL BLENDS.

3. Wipe off any spilled fuel with rags. Allow spilled fuel and vapors to dissipate before turning on any part of the electrical system including the ignition. Place wipe-up rags in a well-ventilated area for drying.
4. Check the fuel tank cap to be sure the breather hole is open. If it is plugged, a vacuum is created and fuel cannot be drawn from the tank by the engine's fuel pump.
5. With fuel line shutoff valve open, check for leaks in the fuel tank, fuel lines and connections, fuel pump, and carburetor. Correct all leaks before starting engine.
6. When the tractor is left unattended, the rear fuel shutoff valve should be closed (turn clockwise).

Fuel screen and filter

To clean/replace the screen in the tank:

1. Close the fuel line shutoff valve at the rear of tractor (under fuel tank).
2. Disconnect fuel line at the fuel shutoff valve. Collect fuel from line in a suitable container.
3. Reopen the shutoff valve. Drain the fuel from the tank into a suitable container.
4. Pull entire shutoff valve out of tank with a twisting motion.
5. Clean the screen or replace shutoff valve. Reinstall shutoff valve. Reconnect fuel line. Fill fuel tank. Open fuel shutoff. Check for leaks.

To replace the filter in the fuel line:

1. Close fuel line shutoff valve.
2. Slide the hose clamps off. Remove the filter. Collect fuel in a suitable container.
3. Add new filter with arrow pointing toward carburetor. Reinstall hose and clamps.
4. Open fuel shutoff. Check for leaks.

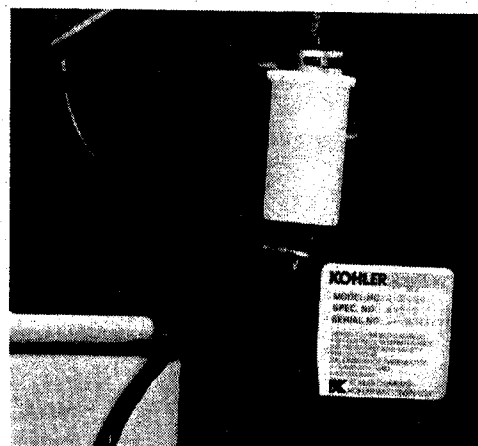


Figure 12. In-line fuel filter.

Maintenance

Hydraulic system

The hydraulic system consists of the hydrostatic transmission, power steering, cylinders, valves, hoses, fittings, and filter. The transmission, cylinders, and valves are not repairable. Contact your Dealer for replacement.



WARNING: Keep body and hands away from pin hole leaks that eject hydraulic fluid under high pressure. When searching for leaks use paper or cardboard, not hands.

NOTE: Make certain implement lift cylinders are retracted before servicing any hydraulic component.



CAUTION: Hoses under pressure! Escaping fluids can penetrate skin and require immediate surgical treatment. Release all hydraulic system pressure before servicing hydraulic system.



WARNING: Make sure all hydraulic fluid connections are tight. Make sure all hydraulic hoses and lines are in good condition before applying pressure to the hydraulic system.



CAUTION: Do not loosen hose fittings while the engine is running. Do not overtighten fittings. Damage will result from too much force. Tighten only enough to prevent leakage. Use teflon thread sealant if required.

Hydraulic hoses, fittings, and filter may be replaced by the user. After replacing components replenish the hydraulic tank. Run the tractor and check for leaks. Recheck and if necessary, replenish the hydraulic oil. Wipe any spilled oil off the tractor.

Hoses and fittings

The hoses and fittings should be checked at least every 25 hours of tractor operation. The hoses should not be loose or cracked and the fittings should be snug. If they are not in good condition obtain replacements from your Dealer.

Maintenance

Hydraulic system (continued)

Oil

The oil in the hydraulic tank, located under the front left corner of the seat, should be at 3" below the top. **DO NOT OVERFILL.** Check the oil level regularly. To check oil, unscrew the cap and look in tank. Fill with VG 46 hydraulic oil or 20W hydraulic oil.

Oil coolers

The hydraulic oil is cooled in oil coolers. These coolers must be kept clean and unobstructed to prevent overheating of the hydraulic system and transmission.

To clean oil coolers:

1. Allow engine to cool. Remove side panels and screens.

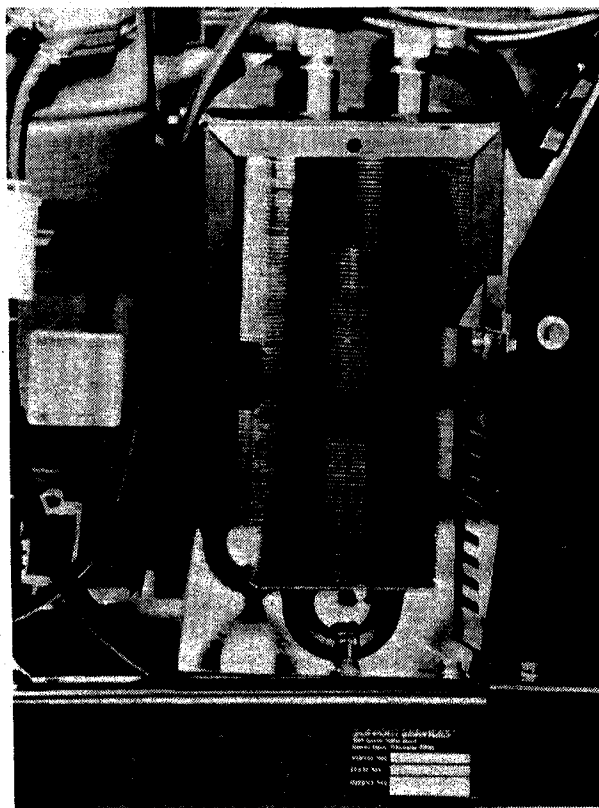


Figure 13. Hydraulic oil coolers.

2. Visually inspect the cooler fins located between the console and engine. Remove any debris caught between the fins. **BE VERY CAREFUL** not to bend or damage the fins.

3. Separate any fins which are touching each other. Use a brush and/or water under moderate pressure to clear out the oil cooler compartment.

4. Replace screens and side panels.

Oil filter

The transmission oil filter should be replaced every 100 hours. Gain access to the filter from beneath the tractor. Unscrew the filter and replace with a new filter.

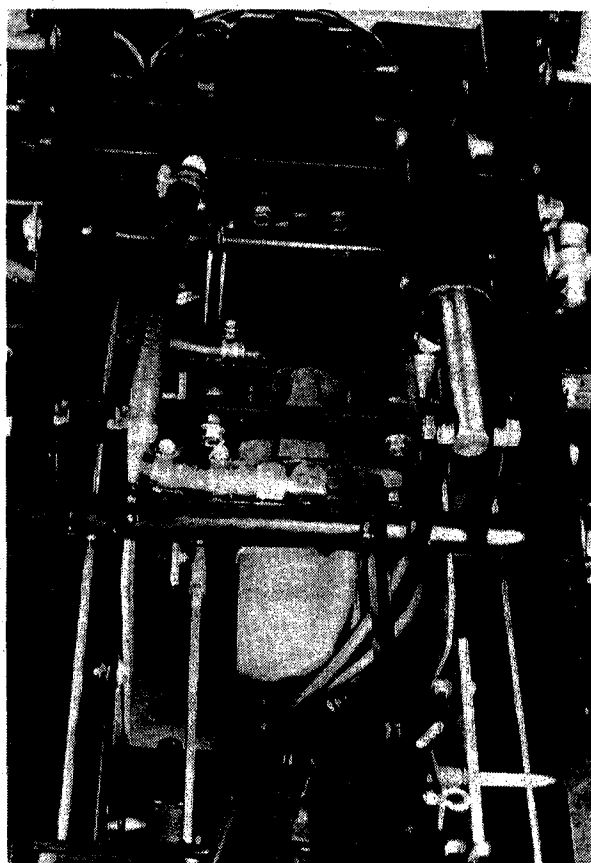


Figure 14. Hydraulic oil filter.

Maintenance

Lubrication

To maintain optimum performance, certain areas of the tractor should be cleaned and lubricated at various intervals. Follow the recommended steps to prevent premature or excessive wear of the parts.

Differential

The differential should be lubricated every 100 hours of tractor use. It is located at the rear of the tractor, under the fuel tank. To lubricate the differential:

1. Clean the exposed area of the rubber plug and clean the area around the plug.
2. Pull the rubber plug. Fill the differential to the bottom of the hole with 80/90 gear lube. Replace plug.

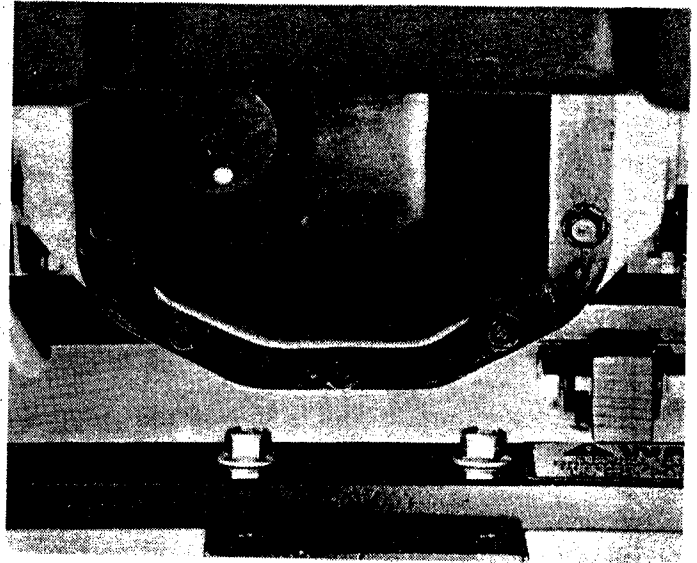


Figure 15. Differential.

Final drive

The final drive should be lubricated every 100 hours of tractor use. The final drive consists of two gear assemblies. They are to the inside of the rear wheels, connected by the differential. To lubricate the final drive do the following to each gear assembly:

1. Clean the exposed areas of the fill plug and the check plug. Clean the areas around the fill and check plugs.
2. Pull the fill plug and check plug. Fill the fill hole with 80/90 gear lube until lube runs out the check hole. Replace plugs.

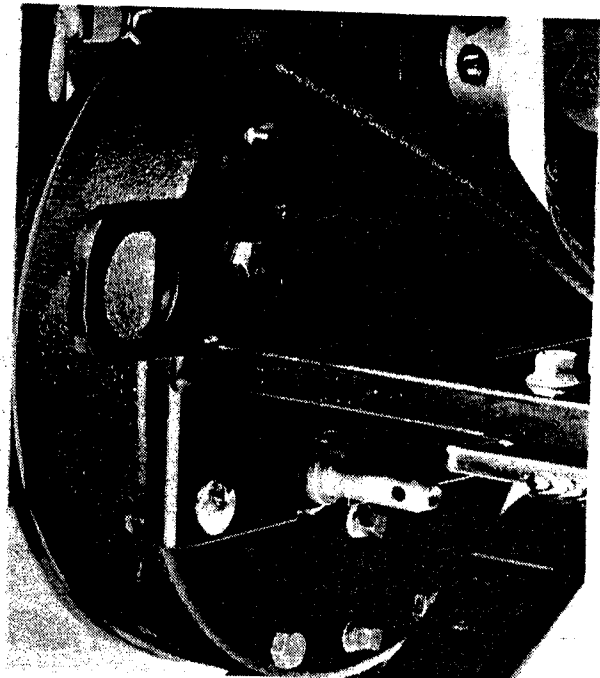


Figure 16. Final drive.

Lubrication (continued)

Steering spindle grease fittings

The front steering spindle grease fittings, one on each spindle, should be greased every 25 hours of tractor use. To grease the fittings do the following:

1. Jack up the tractor and support it with blocks.
2. Squirt lithium based grease into the fittings (5) until the grease oozes out. Then turn the steering wheel a few times to distribute the grease.

Support bar grease fitting

The front support bar grease fitting should be greased every 25 hours of tractor use. To grease the fitting do the following:

1. Jack up the tractor and support it with blocks.
2. Squirt lithium based grease into the fitting (4) until the grease oozes out. Then turn the steering wheel a few times to distribute the grease.

Wheel bearings

The front wheel bearings should be packed every 100 hours of tractor use. There are two bearings in each front wheel hub. To pack the bearings do the following to each front wheel:

1. Jack up the tractor and support it with blocks.
2. Remove the tire and wheel assembly by removing the five nuts (14) from the studs (13).

3. Remove the dust cap (12), cotter pin (17), nut (15), and washer (16). Pull the hub assembly off the spindle.

4. Remove the outer bearing (10). Place the hub upside down on a workbench. Remove the inner bearing and seal (10, 11).

5. Clean the bearings and hub with a non-flammable solvent. Inspect the bearings and hub for cracks, stress or pitting. Replace the bearing and race if either is damaged.

6. Fill the inner and outer bearings with an approved high temperature grease. Place a small amount of grease inside the hub, in the dust cap, and on the spindle.

7. Place the inner bearing in the hub. Install the seal so it is flush with the hub flange. Place the hub on the spindle. Install the outer bearing, washer, and nut. Mount the tire and wheel assembly.

8. While spinning the wheel, snug the nut down to seat the bearing, being careful not to exert over 12 ft.-lbs. of force. Back the nut off 1/4 to no more than 1/2 turn. Finger-tighten the nut until the cotter pin hole in the spindle lines up with the hole in the nut.

9. Install the cotter pin. Endplay should measure between .001" - .008". If not, readjust by repeating step 8.

10. Lock the cotter pin in place. Install the dust cap over the nut.

Lubrication (continued)

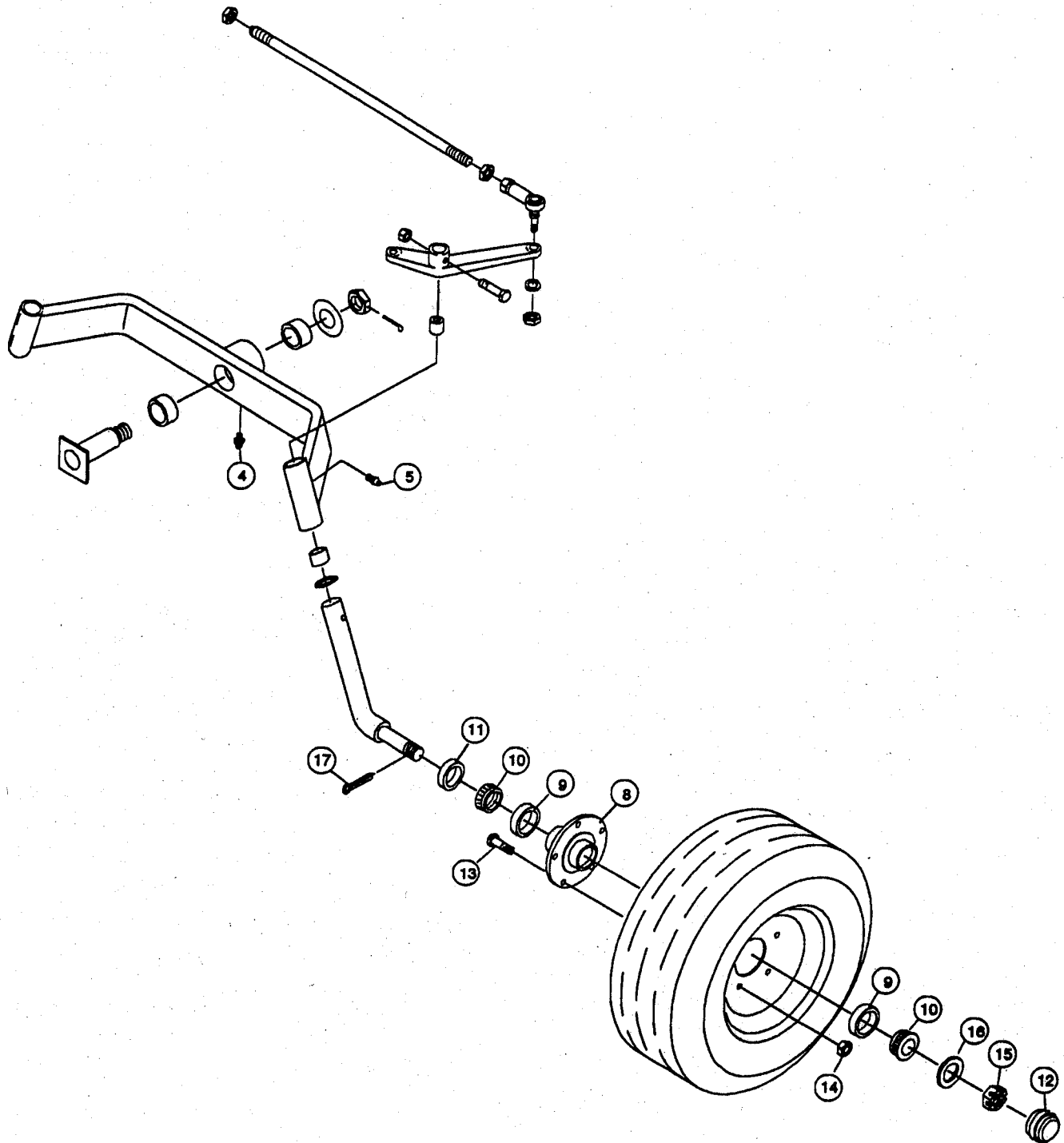


Figure 17. Front end grease fittings and wheel bearings.

PTO and EMC

⚠ DANGER: Never attempt to check or adjust the PTO or EMC while the PTO is engaged. This will result in personal injury or damage to property. Push PTO switch down to "OFF" position, stop tractor engine, and remove key before adjusting the PTO or EMC.

PTO (power take off)

The drive belt of the PTO should be checked before every use. It may need adjustment or replacement periodically. The belt should not be slipping and it should have 1/4" flex (approximately 2-1/2" overall spring length). Replace the belt if it is worn, cut, or frayed. Obtain a new belt from your Dealer. Do not use substitutes.

Adjusting or replacing belt

1. Be sure engine is cool and not running, and brake is engaged. Turn off the PTO switch.
2. Locate the PTO drive belt adjusting nuts on the front left side of the tractor.
3. Loosen the outer nut. If removing belt, note orientation. Loosen the inner nut and pull belt off.
4. If installing new belt, orient it as noted previously. Adjust tension, compressing the tension spring to an overall length of 2-1/2", by loosening or tightening the inner nut.
5. When the tension is properly adjusted, tighten the outer nut against the inner nut.

EMC (electromagnetic clutch)

The EMC needs no lubrication. If oil or grease inadvertently contaminates its working surfaces remove the contaminants by turning engine off and allowing it to cool. Then pour a generous quantity of a cleaning fluid, such as ammonia, between the working surfaces.

The clutch portion of this clutch/brake

combination unit is self-adjusting. The brake section may require adjustment depending on usage. To adjust the brake:

1. Be sure engine is cool and not running. Turn off PTO switch.
2. Raise hood. Remove side panels. Remove belt from EMC pulley.
3. Place a shim, .012" - .015" thick, in each of the three slots in the brake flange. Slots are located by the locknuts.
4. Turn on the PTO switch. Loosen the locknuts holding the flange. Push the flange until it bottoms. Retighten locknuts using caution not to over torque them and damage the flange.
5. Turn off the PTO switch. Remove the shims. Check the gaps to be sure they are between .012" - .015". Readjust as required. Reinstall the belt.
6. Start the engine and check the clutch operation. If the engine drags when the PTO is either OFF or ON, recheck the gap. The gap must be within the range of .005" - .023" on all three studs. Readjust if necessary. Reinstall side panels.

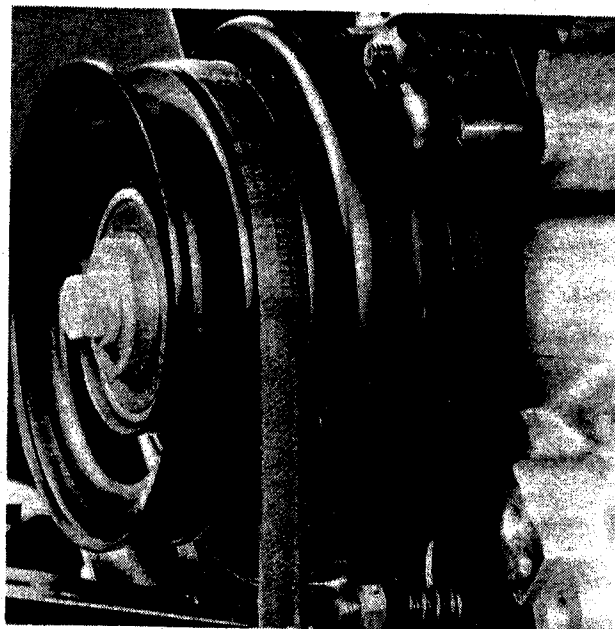


Figure 18. PTO belt and EMC.

Maintenance

Tires and wheels

Tire maintenance

Proper tire maintenance is one of the most important factors in the satisfactory performance of your tractor. Observe the following tire care rules for best results:

1. Immediately wipe spilled oil or gasoline from tires. Do not park in spilled oil. Petroleum products attack rubber. Clean chemicals from tires as soon as possible.
2. Avoid sharp objects which may cut or puncture tires.
3. Avoid "bruising" tires by striking hard objects with heavily loaded tractor or at high speeds.
4. Do not "spin" tires during start-up.
5. Do not brake to skidding stops.

Tire pressure

Maintain proper inflation:

Underinflation may cause rim slipping, excessive wear, and a low or uneven cut when mowing.

An underinflated tire may appear to be properly inflated but will buckle when the tractor pulls a load. Sidewalls will eventually break.

Overinflation may cause the rear wheels to slip under load and cause faster tire wear as a smaller part of the tire is in contact with the ground.

A correctly inflated tire results in good traction with the least wear. The recommended pressure may vary depending upon the load.

Recommended tire pressure:

Width-rim	8.0-16	8.3-16	8.0-16	13.5-15
O.D. (inches)	31-3/4"	31-5/16"	31-1/4"	30-3/4"

Rear tires: 10 lbs. 18 lbs. 10 lbs. 10 lbs.

Width-rim	4.0-12	4.0-12	4.0-12	8.0-10
O.D. (inches)	20-1/4"	20-1/4"	20-1/4"	19-1/2"

Front tires: 40 lbs. 40 lbs. 40 lbs. 12 lbs.

Tread width

Tread width refers to the spread or spacing between the center lines of the two rear wheels or the two front wheels of the tractor.

When moving on slopes or rough uneven ground, it is important to have as wide a spread as possible between the wheels. This makes the tractor more stable and reduces the possibility of a "rollover."

REAR WHEELS - to increase the tread width from the standard position mount the right rear wheel on the left side and the left rear wheel on the right side. Switching wheels from one side to the other will maintain the proper direction of tire rotation. (Note: Does not apply to 13.5-15 wheels.)

Changing wheels

To remove a wheel and tire:

1. Remove any wheel weights. Block the other wheels to prevent the tractor from rolling.
2. Raise the tractor with a jack under the frame. Block the tractor to prevent it from falling.
3. Remove wheel bolts and carefully slide the wheel and tire from the tractor.

Tires and wheels (continued)

Wheel weights

Added weight to the front and/or rear wheels can make tractor operation easier and safer under certain conditions.

REAR WHEELS - added weight on the rear wheels will be helpful:

- When pulling - the weights will give added traction and reduce slippage.
- In maintaining traction with a heavy load at the front of the tractor (such as with a snowblower or bulldozer blade).

FRONT WHEELS - front counterweights mounted on the front wheels or on the front weight rack will be helpful:

- In balancing the lifting action caused by rear-mounted attachments.
- In keeping the front wheels from rising when driving up a slope.
- When pulling heavy loads on rough ground.

Wheel weights should be used in pairs to give an equal amount of added weight on each side of the tractor.

Operating with weight on only one side will cause uneven tire wear and tend to tip the tractor. This can cause improper operation of some attachments such as a rotary mower.

NOTE: Do not exceed three weights per wheel, six suitcase counterweights or any combination of loads that will exceed the rated tire capacity.

REAR WEIGHT RACK OR WEIGHT BOX OPTION - a weight rack or weight box may be mounted on the 3-point hitch.

DUAL REAR WHEELS - spacer kits are available that allow the addition of an extra wheel to the outside of each rear wheel. Dual rear wheels will increase stability and add traction. (Does not apply to 13.5 - 15 wheels.)

Transmission

The transmission (hydraulic) oil coolers must be kept clean at all times to prevent the transmission from overheating. The oil filter should be changed every 100 hours.

Refer to "Hydraulic system" for details on cleaning the coolers and replacing the filter.

Tractor Storage

When the tractor is not to be used for an extended period of time, it should be prepared for storage. This helps to extend its life, keep it in prime condition, and make it ready for future use.

The tractor should be stored in a dry and protected place. Unnecessary exposure to sun, wind, rain, or snow may have harmful effects on its appearance and usefulness.

The tractor should be started up and driven at least every six months to maintain critical lubrication coverage on moving parts.

Engine

To prepare the engine for storage:

1. Change the oil. Run the engine long enough to thoroughly warm the old oil in the crankcase before draining.
2. Run the engine for about five minutes after adding new oil supply.
3. Close the fuel shutoff valve and run engine until fuel in carburetor is used up.



WARNING: Handle fuel carefully. Always stop the engine and turn off all electrical systems, including the headlights, when servicing the fuel system. Do not permit smoking in the area. Keep flames and sparks away from the area.

4. Using a pair of notched pliers on the hose clamp, disconnect the fuel line from the fuel shutoff valve. Drain fuel line.
5. Reopen the fuel shutoff valve and drain fuel tank. When empty, remove fuel filter from valve and wash out as required. Reinstall valve and replace in tank.

NOTE: It is important to perform these fuel line functions because gum will eventually form in the tank, line, and carburetor if the system is not used.

Gum in the carburetor jets and passages makes

engine starting difficult. Gum can be dissolved with acetone or a 50-50 mixture of alcohol and benzol.

6. Remove each spark plug and pour one tablespoon of good quality lubricating oil into each cylinder. Crank the engine two or three times to distribute the oil over the cylinder walls.

7. Recheck the gap and reinstall each plug.

Battery

1. Disconnect the black (negative) battery cable. Disconnect the red (positive) cable. Remove the battery. Clean any corrosion that may have accumulated around the posts. Store the battery on a rack or bench in a cool, dry place.
2. The battery should be checked every 30 to 60 days while in storage and should be recharged if necessary. When a battery becomes discharged, the electrolyte contains more water than acid. In this discharged condition, the battery could freeze and possibly crack during cold winter weather.

Lubrication

Completely lubricate the tractor. See "Lubrication" in Maintenance section.

Body

1. Wash, clean, and wax the hood and body sections.
2. Paint rust-preventative oil over any area where raw metal is exposed (except pulley grooves). Do not use crankcase oil as it is not a rust preventative.

Tires

1. Store the tractor so that the tires are protected from direct sunlight.
2. Place jacks or blocks under the tractor so that the load is off the tires.

If the tractor cannot be placed on blocks, check the tires at regular intervals and reinflate as necessary to keep them at recommended pressure.

Attachments

The tractor is equipped with a Uni-tatch[®] adapter for attaching front implements; a lift weldment for raising/lowering implements, and a towbar for attaching rear implements.

In addition to these standard features, adaptations can be done to enhance the tractor's capabilities. These adaptations include the addition of a rear PTO, an auxiliary hydraulic lift, and a 3-point hitch.

See your Dealer for a complete list of standard and optional attachments.

Standard adaptations

Front Uni-tatch[®] adapter

The front Uni-tatch[®] adapter is permanently affixed to the bottom front of the tractor frame. Attachments such as a snowblower or rotary broom are mounted here.

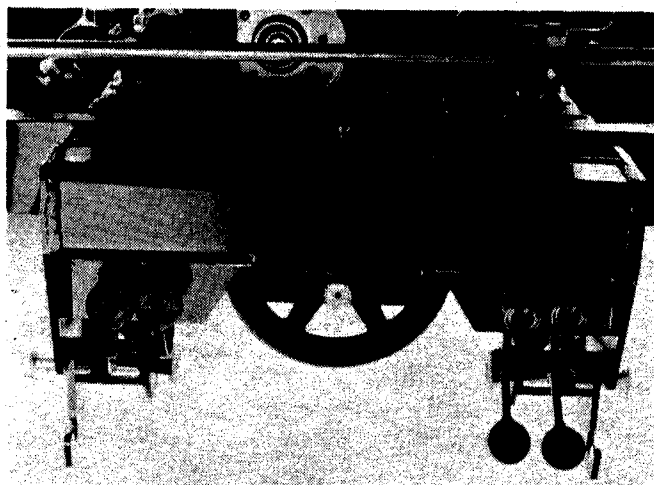


Figure 19. Uni-tatch[®] adapter.

Middle lift weldment

A lift weldment is mounted on the underside of the tractor between the frame side members. This weldment rotates forward or backward as the implement lift system is activated. The arm(s) that is used depends on the attachment.

Rear towbar

The rear-mounted towbar is used when pulling trailers, spreaders, yard carts, or any other vehicle (unless the 3-point hitch is installed).



WARNING: Never pull from any other part of the tractor frame.

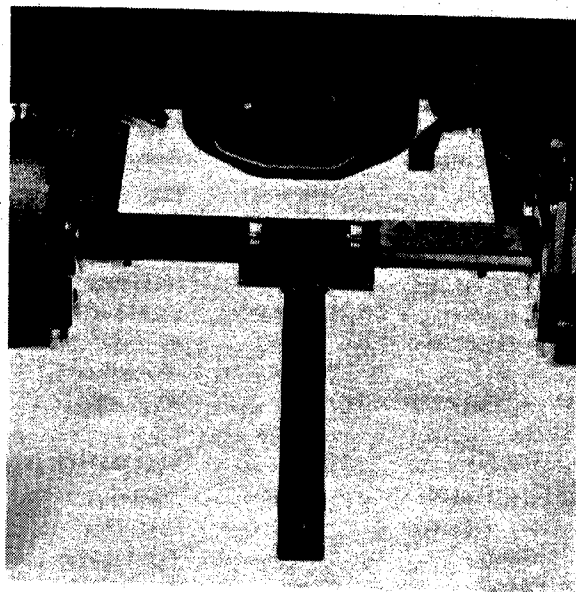


Figure 20. Towbar.

Optional adaptations

3-Point hitch

The 3-point hitch is for pulling category "O" implements and attachments. When installed, it should be used for all pulling.

Auxiliary hydraulic lift

The auxiliary hydraulic lift allows rear-mounted implements to be raised/lowered independently of the front and center-mounted implements.

Rear PTO

The rear PTO is used to power rear-mounted rotary attachments, such as flail and sickle mowers and rototillers.

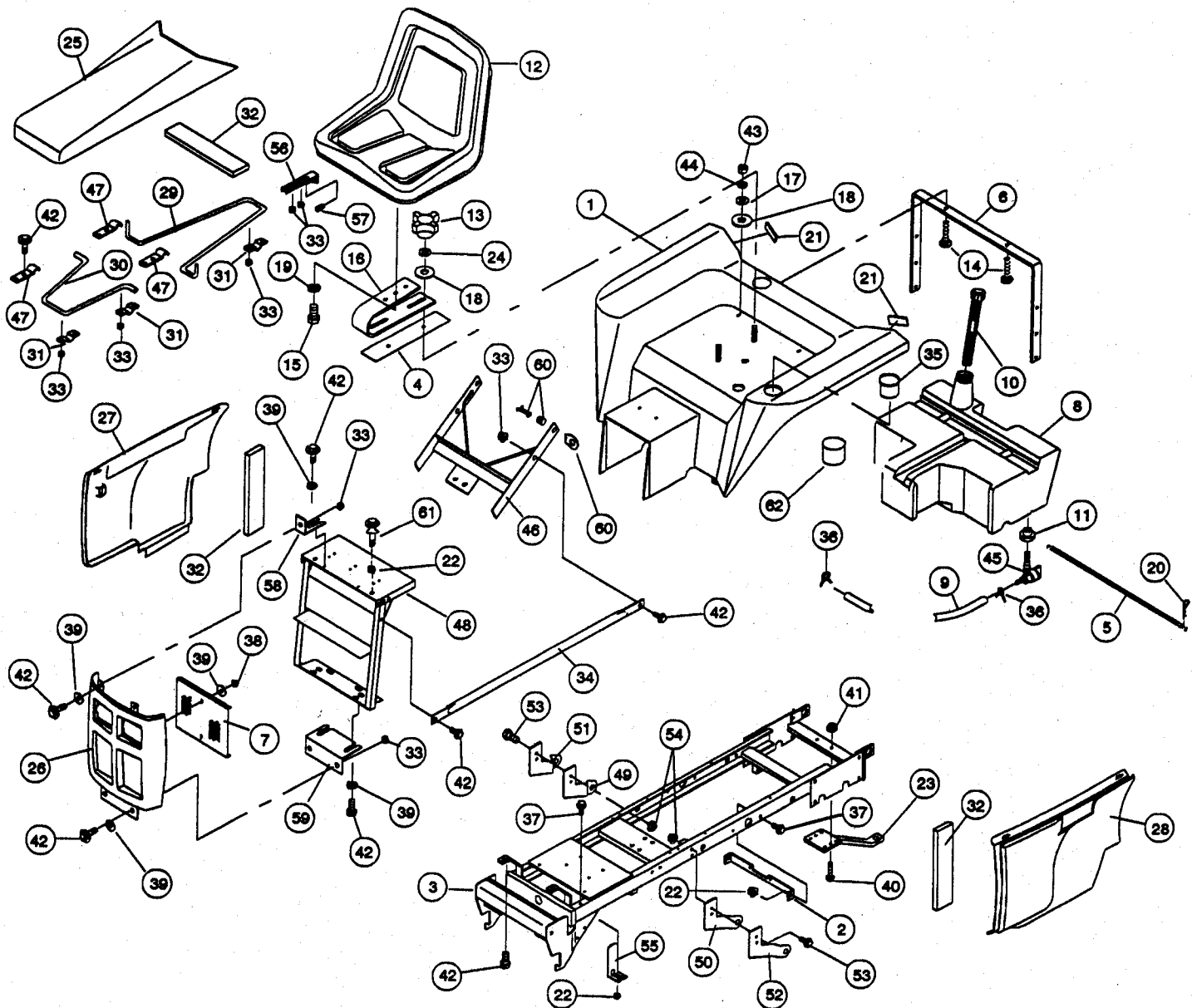
Parts Lists and Drawings

Body

ITEM NO.	PART NO.	QTY	PART NAME	DESCRIPTION
1	103999	1	Body	Fender - orange
(1)	104127	1	Body	Fender - (red)
2	102044	1	Bracket	Support Transmission
3	103752	1	Frame	Weldment
4	01-6101-00	1	Plate	Seat spring support
5	01-6540-00	1	Rod	Fuel tank support
6	01-6890-00	1	Support	Fender body
7	103991	1	Screen	Grille
8	01-7501-00	1	Tank	Fuel 8.25 gallon
9	104275	1	Line	Fuel
10	03-0900-00	1	Cap	Fuel gauge
11	03-2502-00	1	Grommet	Valve, fuel tank
12	03-7107-00	1	Seat	14" Back
13	100921	2	Knob	Seat
14	84-1027-00	2	Bolt	Carr 3/8 NC x 1-1/2
15	84-1062-00	1	Screw	HHC 1/2 NC x 1
16	01-7112-00	1	Bracket	Spring seat mount
17	84-3037-00	2	Washer	Flat, 3/8 type N
18	84-3061-00	4	Washer	Flat, 1/2 type W
19	84-3110-00	1	Washer	Lock 1/2 regular
20	84-4034-00	2	Key	Quick change
21	03-6702-00	2	Reflector	Rear
22	103124	6	Nut	Flange 3/8 NC serrated
23	01-1304-00	1	Drawbar	Stationary
24	84-3770-00	2	Washer	Lock int 1/2
25	103987	1	Hood	Top - orange
(25)	104122	1	Hood	Top - (red)
26	103990	1	Grille	Front - orange
(26)	104121	1	Grille	Front - (red)
27	103988	1	Hood	Panel RH - orange
(27)	104123	1	Hood	Panel RH - (red)
28	103989	1	Hood	Panel LH - orange
(28)	104124	1	Hood	Panel LH - (red)

ITEM NO.	PART NO.	QTY	PART NAME	DESCRIPTION
29	103967	1	Rod	Hood prop rear
30	104281	1	Rod	Hood prop front
31	103978	3	Clip	Hinge
32	104174	1	Foam	2" x .5" x 4.5"
33	200183	14	Nut	Flange 1/4 NC serrated
34	104277	2	Rod	Support
35	104134	1	Cupholder ..	Drop-in
36	85-0044-00	2	Clamp	Hose, SAE J5366
37	103140	4	Screw	HWH 3/8 NC x 1
38	84-0010-00	2	Nut	Lock HX 1/4 NC
39	10287	10	Washer	Flat 1/4 type W
40	104187	2	Screw	HWH 7/16 NC x 2
41	102998	2	Nut	Flange 7/16 NC serrated
42	104188	20	Screw	HWH 1/4 NC x 3/4
43	84-0041-00	2	Nut	HX 3/8 NC
44	84-3020-00	2	Washer	Lock 3/8 regular
45	104197	1	Valve	Fuel 90 DEG tank mount
46	104278	1	Bracket	Rear
47	104280	3	Clip	Mounting
48	104282	1	Bracket	Front
49	102421	1	Bracket	Deck RH inboard
50	102422	1	Bracket	Deck LH inboard
51	102423	1	Bracket	Deck RH outboard
52	102424	1	Bracket	Deck LH outboard
53	10259	4	Screw	HHC 5/16 NC x 1-1/4
54	84-0101-00	4	Nut	Lock Hx 5/16 NC
55	104377	2	Bracket	Retaining panel
56	104409	1	Bracket	Hood latch
57	104365	1	Plunger	Ball 3/8 dia.
58	104410	2	Clip	Mounting grille top
59	104411	1	Clip	Mounting grille bottom
60	104221	4	Fastener	Cam-loc 1/4 turn
61	104447	2	Screw	Nylon thumb 3/8 x 1.00
62	104493	1	Sleeve	Rubber

Body



Parts Lists and Drawings

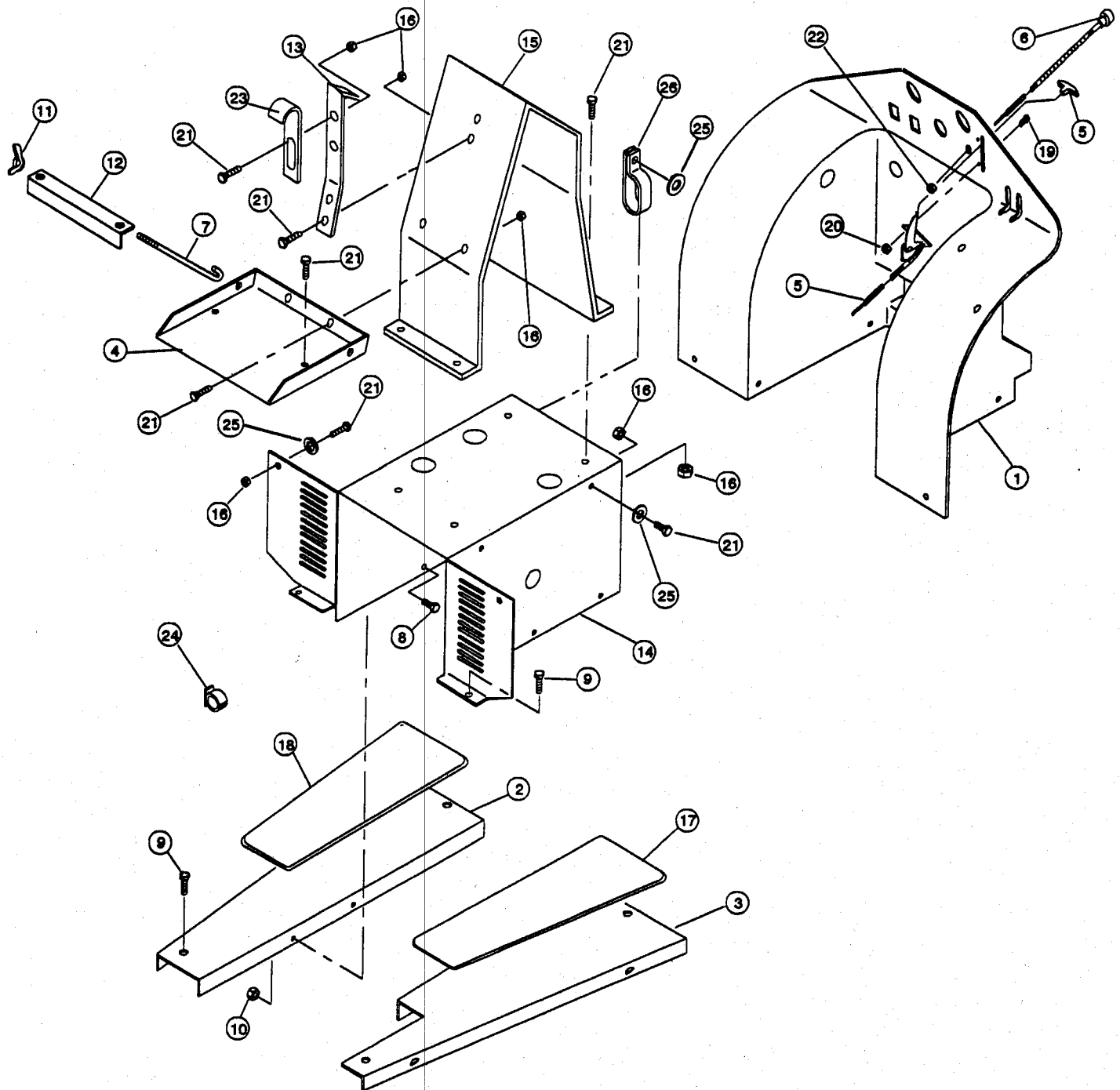
Console

ITEM NO.	PART NO.	QTY	PART NAME	DESCRIPTION
1	104311	1	Console	Fiberglass
2	102068	1	Plate	Footrest RH
3	102070	1	Plate	Footrest LH
4	103977	1	Shelf	Battery
5	103993	1	Control	Throttle
6	103992	1	Control	Choke
7	84-1014-00	2	Bolt	"L" 1/4 NC x 8-5/16
8	10435	4	Screw	HWH 5/16 NC x 5/8
9	84-2044-00	6	Screw	HWH 5/16 NC x 3/4 Tap
10	102998	4	Nut	Flange 5/16 NC serrated
11	104004	2	Nut	Wing 1/4-20 NC
12	103986	1	Bar	Battery holder

ITEM NO.	PART NO.	QTY	PART NAME	DESCRIPTION
13	103981	1	Bar	Console Support
14	104001	1	Support	Bottom Console
15	104000	1	Support	Steering gear
16	200183	16	Nut	Flange 1/4 NC serrated
17	01-6303-00	1	Pad	Foot-LH anti-slip
18	01-6304-00	1	Pad	Foot-RH anti-slip
19	104097	2	Screw	THM #8-32 x 5/8
20	104098	2	Nut	Lock #8-32 Nylon insert
21	104188	18	Screw	HWH 1/4 NC x 3/4
22	104189	1	Nut	Jam HX 3/8 NF
23	104002	1	Latch	Hood
24	02-4714-00	1	Clip	Hold down
25	10287	7	Washer	Flat 1/4 Type W
26	102190	1	Clamp	1/2 Double Tube

Parts Lists and Drawings

Console



Parts Lists and Drawings

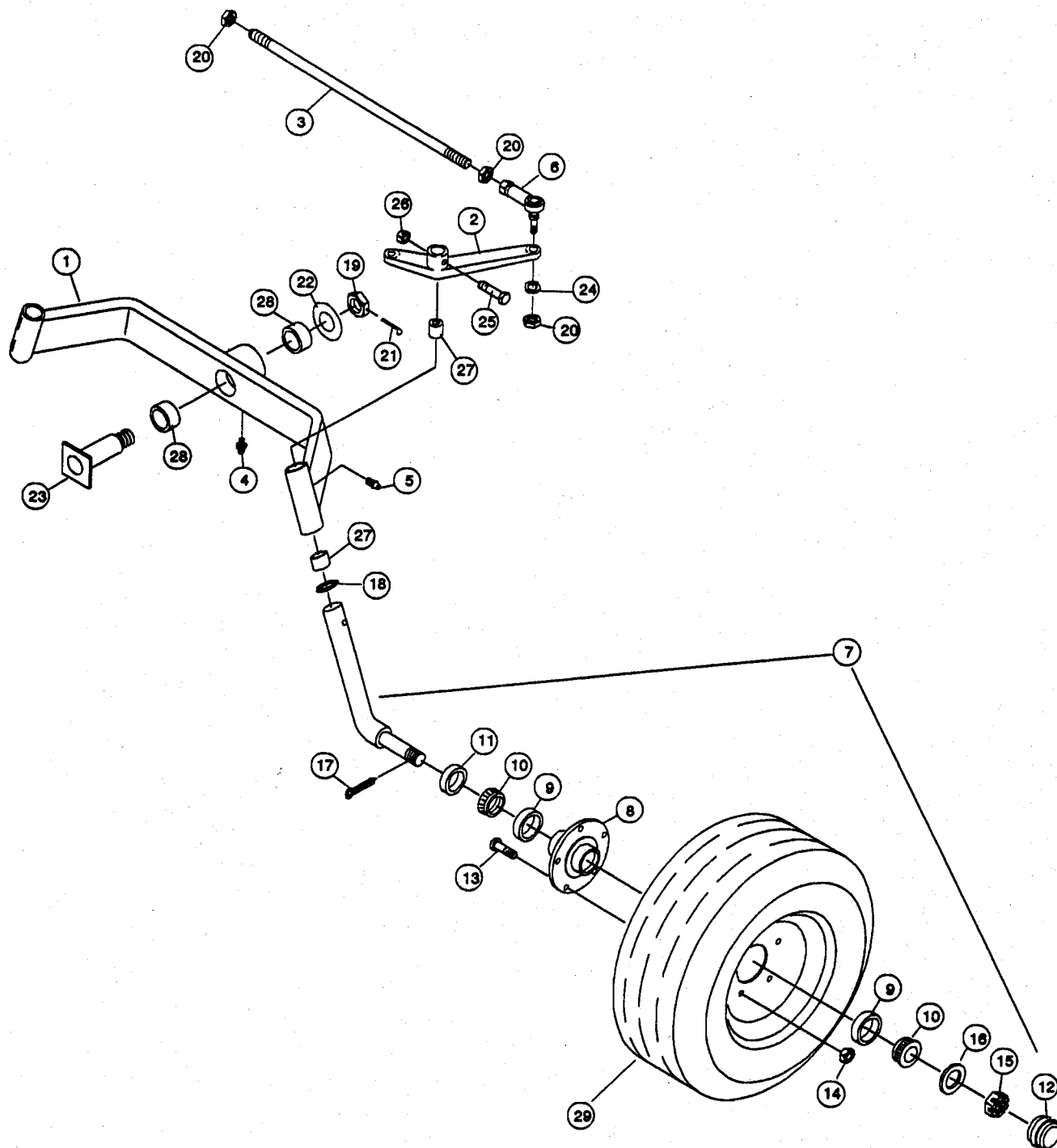
Front end assembly and front wheels

ITEM NO.	PART NO.	QTY	PART NAME	DESCRIPTION
1	102676	1	Bar	Front axle support
2	01-0220-00	1	Spindle	Steering arm, RH
(2)	01-0221-00	1	Spindle	Steering arm, LH
3	01-0910-00	1	Rod	Tie, coupling 28" lg.
4	03-2122-00	1	Fitting	Grease 1/4-28 90°
5	03-2102-00	2	Fitting	Grease 1/4-28 short
6	03-4107-00	2	Knuckle	Rod end 1/2" NF threads
7	103709	2	Spindle	Front ASM (includes items 8-17)
8	103824	2	Hub	Assembly (includes items 9 & 13)
9	103828	4	Cup	Bearing, 1.00 bore
10	103829	4	Cone	Bearing 1.00 cup
11	103827	2	Seal	1-1/4 ID x 1/4 wide
12	103830	2	Cap	Hub, 2" dia.
13	103825	10	Stud	Wheel, 1/2-20 x 1-7/8
14	103826	10	Nut	Wheel, 1/2-20
15	84-0073-00	2	Nut	HX 3/4 NF slotted RH

ITEM NO.	PART NO.	QTY	PART NAME	DESCRIPTION
16	84-3070-00	2	Washer	Flat 3/4 type N
17	101857	2	Pin	Cotter 5/32 dia. x 1-3/4
18	80-0024-00	2	Bearing	Thrust
19	84-0080-00	1	Nut	HX 1-1/8 NF elotted
20	84-0131-00	4	Nut	HX 1/2 NF
21	84-4020-00	1	Key	Cotter 5/32 x 1-1/2
22	84-3077-00	1	Washer	Flat 1-1/8 type N
23	101950	1	Axle	Pivot Weldment
24	84-3110-00	2	Washer	Lock 1/2 regular
25	102522	2	Screw	HHC 7/16 NC x 2-1/4
26	102127	2	Nut	Lock (center) 7/16 NC
27	80-0013-00	4	Bushing	1-1/8 ID x 1-3/8 OD x 1
28	80-0019-00	2	Bushing	Sleeve, 1-1/2 ID x 1 lg
29	103875	2	Tire & Wheel	Three rib front AG.

Parts Lists and Drawings

Front end assembly and front wheels



Parts Lists and Drawings

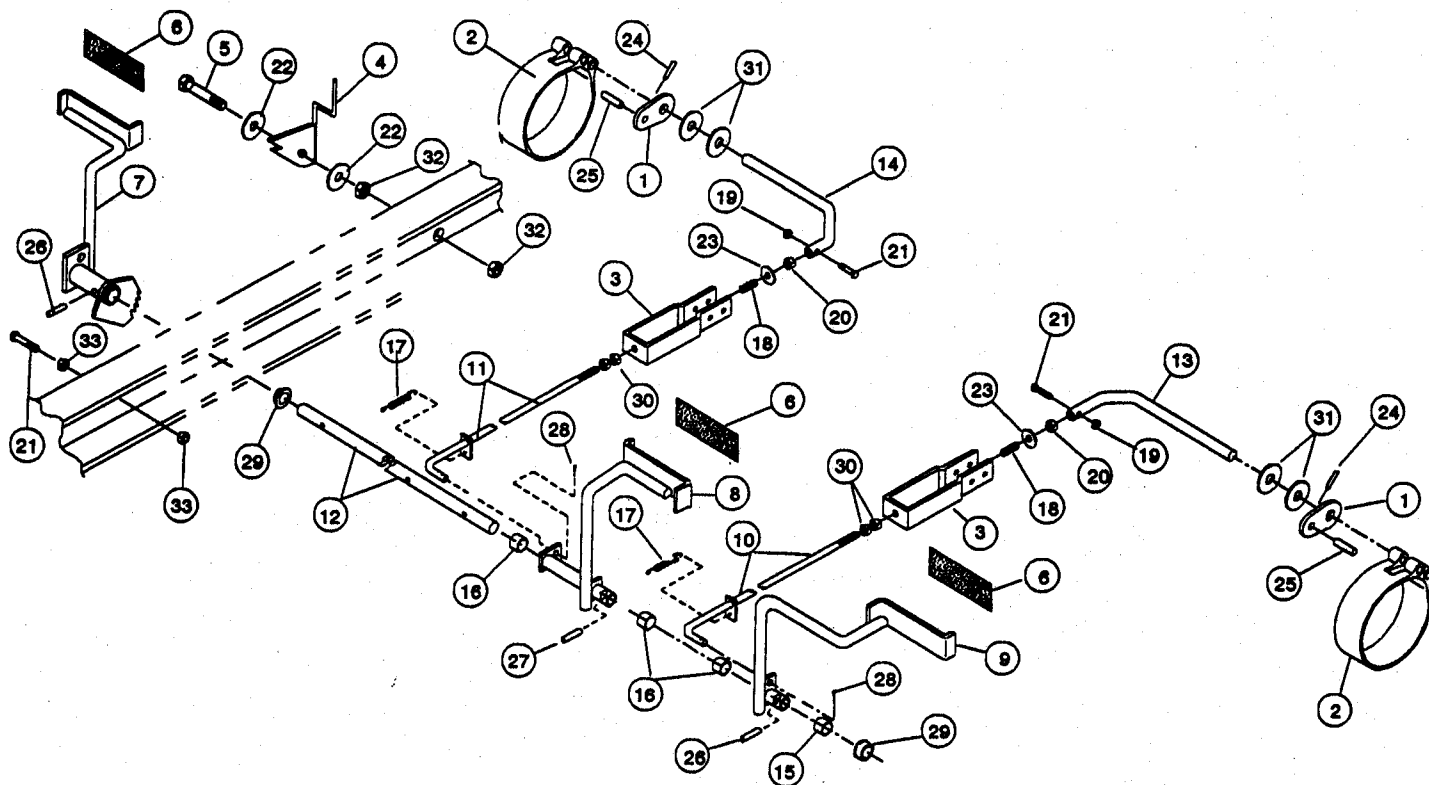
Brake system

ITEM NO.	PART NO.	QTY	PART NAME	DESCRIPTION
1	01-0104-00	2	Arm	Brake, 2.3 lg.
2	01-0513-00	2	Band	Brake, 4" dia., 2 loops
3	01-2510-00	2	Clevis	Brake, 5-5/8 lg.
4	102298	1	Brake	Lock
5	102125	1	Screw	HHC 7/16 NC x 1-3/4
6	101624	3	Pad	Grit brake pedal
7	102275	1	Pedal	Brake, emergency
8	102272	1	Pedal	Brake, RH
9	102040	1	Pedal	Brake, LH
10	102063	1	Rod	Brake, LH
11	102062	1	Rod	Brake, RH
12	102276	1	Shaft	Brake pedal pivot
13	01-8716-00	1	Shaft	Brake actuating, LH
14	01-8717-00	1	Shaft	Brake actuating, RH
15	102615	1	Bushing	7/8 x 3/4 x 3/8 lg.
16	80-0017-00	3	Bushing	7/8 x 3/4 x 5/8 lg.
17	101235	2	Spring	Extension .5 x .055

ITEM NO.	PART NO.	QTY	PART NAME	DESCRIPTION
18	83-1032-00	2	Spring	Compress 1 x .177
19	84-0010-00	2	Nut	Lock HX 1/4 NC
20	84-0110-00	2	Nut	Lock HX 3/8 NF patch
21	84-2355-00	3	Screw	HHC 1/4 NC x 1-1/2
22	84-3060-00	2	Washer	Flat, 7/16 type N
23	10325	2	Washer	Flat 3/8 type W
24	84-4009-00	2	Pin	Roll, 7/32 dia. x 1-1/4 lg.
25	84-4024-00	2	Pin	3/8 dia. x 1-1/2 lg.
26	84-4027-00	2	Pin	Drive, 5/16 dia. x 1-3/8 lg.
27	103636	1	Pin	Drive, 5/16 dia. x 2-1/4 lg.
28	84-4013-00	2	Pin	Cotter 3/32 dia. x 5/8 STL
29	80-0015-00	2	Bushing	Flange .75 i.d. x .5" lg.
30	84-0109-00	4	Nut	Hex 3/8 NF
31	84-3062-00	4	Washer	Flat, 5/8 type N
32	102998	2	Nut	Flange 7/16 NC serrated
33	200183	2	Nut	Flange 1/4 NC serrated

Parts Lists and Drawings

Brake system



Parts Lists and Drawings

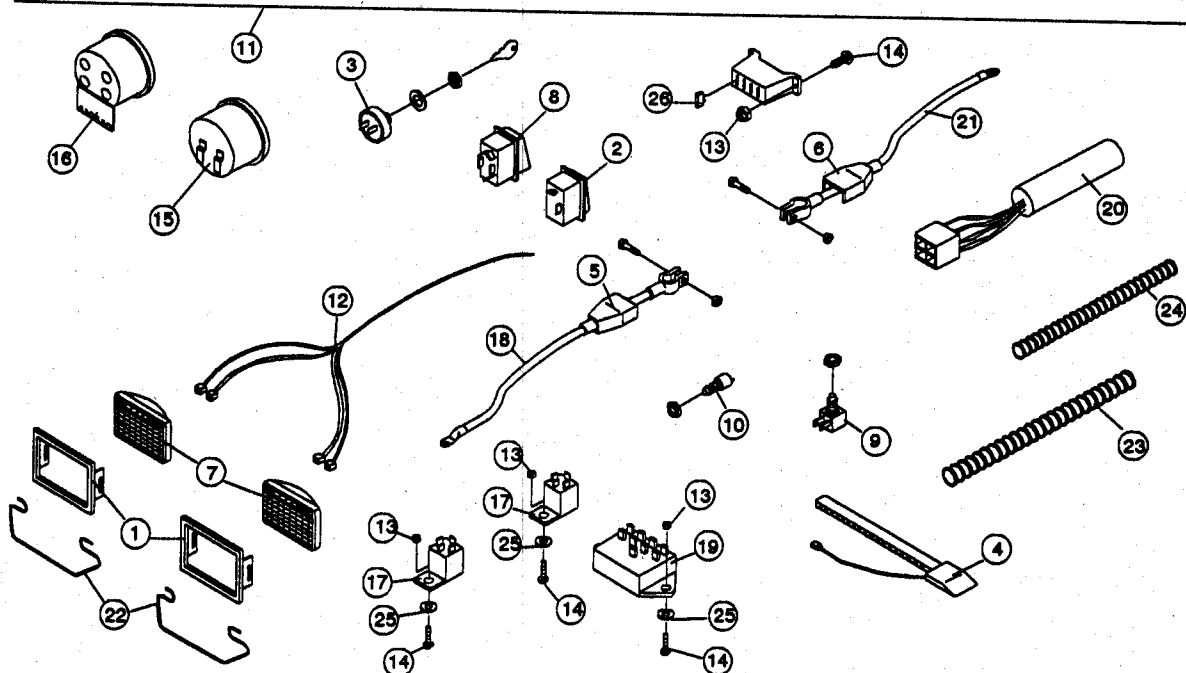
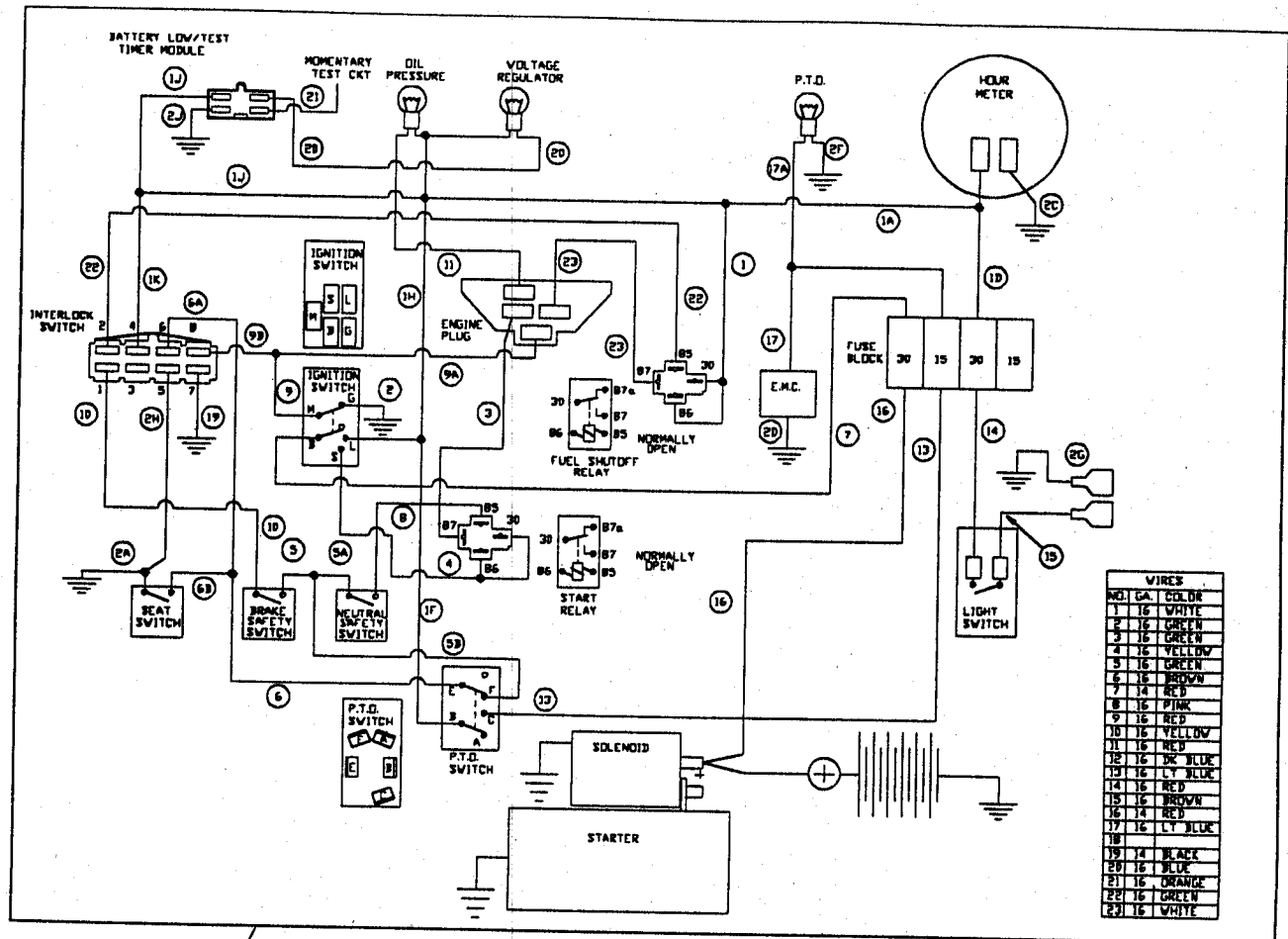
Electrical system

ITEM NO.	PART NO.	QTY	PART NAME	DESCRIPTION
1	103949	2	Bezel	Lamp, snap-head
2	103964	1	Switch	Rocker-light
3	03-2018-00	1	Switch	Ignition, 3-position
4	03-2033-00	1	Switch	Seat, N.O. beam type
5	03-2034-00	1	Cover	Battery term-pos. red
6	03-2035-00	1	Cover	Battery term-neg. black
7	103948	2	Lamp	Head
8	103963	1	Switch	Safety toggle
9	03-7115-00	1	Switch	Hi/Lo, hydro/brake
10	03-7116-00	1	Switch	Clutch gear
11	103650	1	Harness	Main wiring
12	103994	1	Harness	Headlight
13	84-0030-00	6	Nut	Lock #10-24 nylon inert

ITEM NO.	PART NO.	QTY	PART NAME	DESCRIPTION
14	84-2368-00	6	Screw	RHM #10-24 x 3/4
15	103951	1	Meter	Hour
16	103950	1	Light	Cluster
17	104107	2	Relay	12VDC SPDT
18	104131	1	Cable	Pos. battery 30"
19	104254	1	Interlock	Solid stat ignition
20	104257	1	Module	Batter low / test timer
21	104272	1	Cable	Neg. battery 30"
22	104315	2	Retainer	Headlight
23	104369	1	Conduit	3.5 ft., .35 corr. nylon
24	104370	1	Conduit	1.5 ft., .50 corr. nylon
25	100920	4	Washer	Flat, # 10
26		3	Fuse	15 & 30 amp, purchase locally

Parts Lists and Drawings

Electrical system



Parts Lists and Drawings

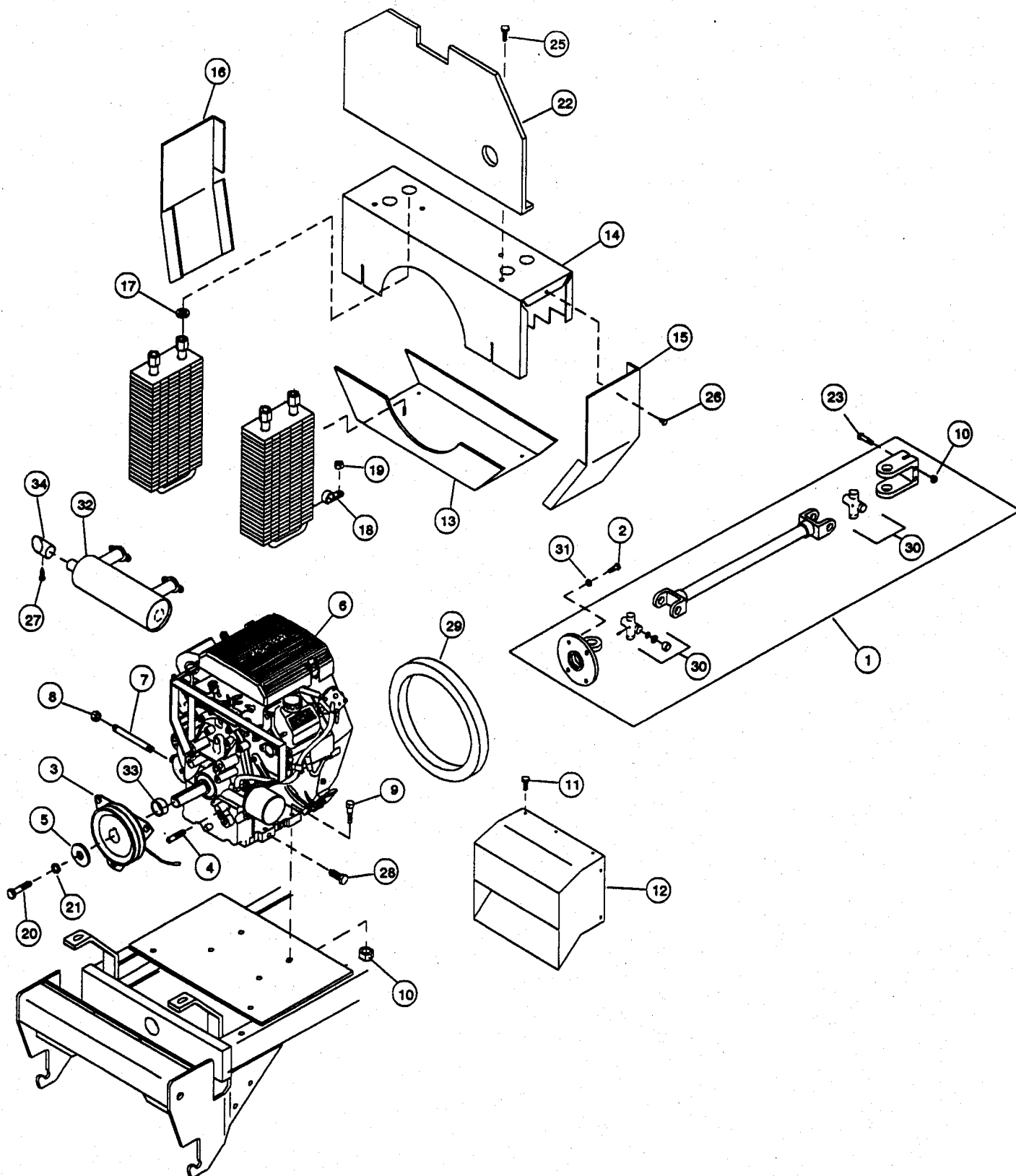
Engine, drive shaft, baffles, and muffler

ITEM NO.	PART NO.	QTY	PART NAME	DESCRIPTION
1	103647	1	Drive Shaft ..	Command 18/20 HP
2	103707	4	Screw	SHC M8 x 1.25 x 30
3	103646	1	Clutch	EMC, bearing mounted
4	103660	1	Stud	3/8 NC x 1-7/16"
5	103104	1	Washer	1.38 x .47 x .25
6	103643	1	Engine	Kohler 20HP Command
7	23-7921-00	1	Fitting	3/8 MP nipple x 5" lg
8	23-7922-00	1	Fitting cap ..	3/8 NPT female
9	84-2100-00	4	Screw	HHC 3/8 NC x 1-3/4
10	103124	6	Nut, flange ..	3/8 NC serrated
11	103706	7	Screw	HWH M6 x 1 x 12
12	103962	1	Shroud	Muffler, Command
13	103964	1	Baffle	Intake, bottom
14	103965	1	Baffle	Intake, top
15	104303	1	Screen	Intake, LH
16	104302	1	Screen	Intake, RH
17	03-2513-00	4	Grommet	Sheet metal

ITEM NO.	PART NO.	QTY	PART NAME	DESCRIPTION
18	85-0041-00	2	Tube clamp ..	13/16 i.d., cushioned
19	200183	2	Nut	Flange 1/4 NC, serrated
20	84-2170-00	1	Screw	HHC 7/16 NF x 1-1/2
21	84-3030-00	1	Washer	Lock 7/16 regular
22	103966	1	Baffle	Isolation
23	104190	2	Screw	HWH 3/8 NC x 1-1/2
24	98-4002-00	2	Oil	Quartz, 10W30
25	104186	2	Screw	HWH 1/4 NC x 3/4
26	84-2370-00	8	Screw	HWH 1/4 NC x 1/2 tap
27	104294	1	Screw	No. 8 self drill
28	104196	2	Screw	HWH M8 x 1.25 x 16
29	104174	1	Foam	2" x 1/2" x 4.5'
30	09-3700-00	2	Assembly ...	Universal joint
31	84-3020-00	4	Washer	Lock 3/8 reg.
32		1	Muffler	Purchase from a local Kohler dealer
33	104220	1	Spacer	1-1/2 x 1-1/8 x .32
34	104286	1	Pipe	Exhaust

Parts Lists and Drawings

Engine, drive shaft, baffles, and muffler



Parts Lists and Drawings

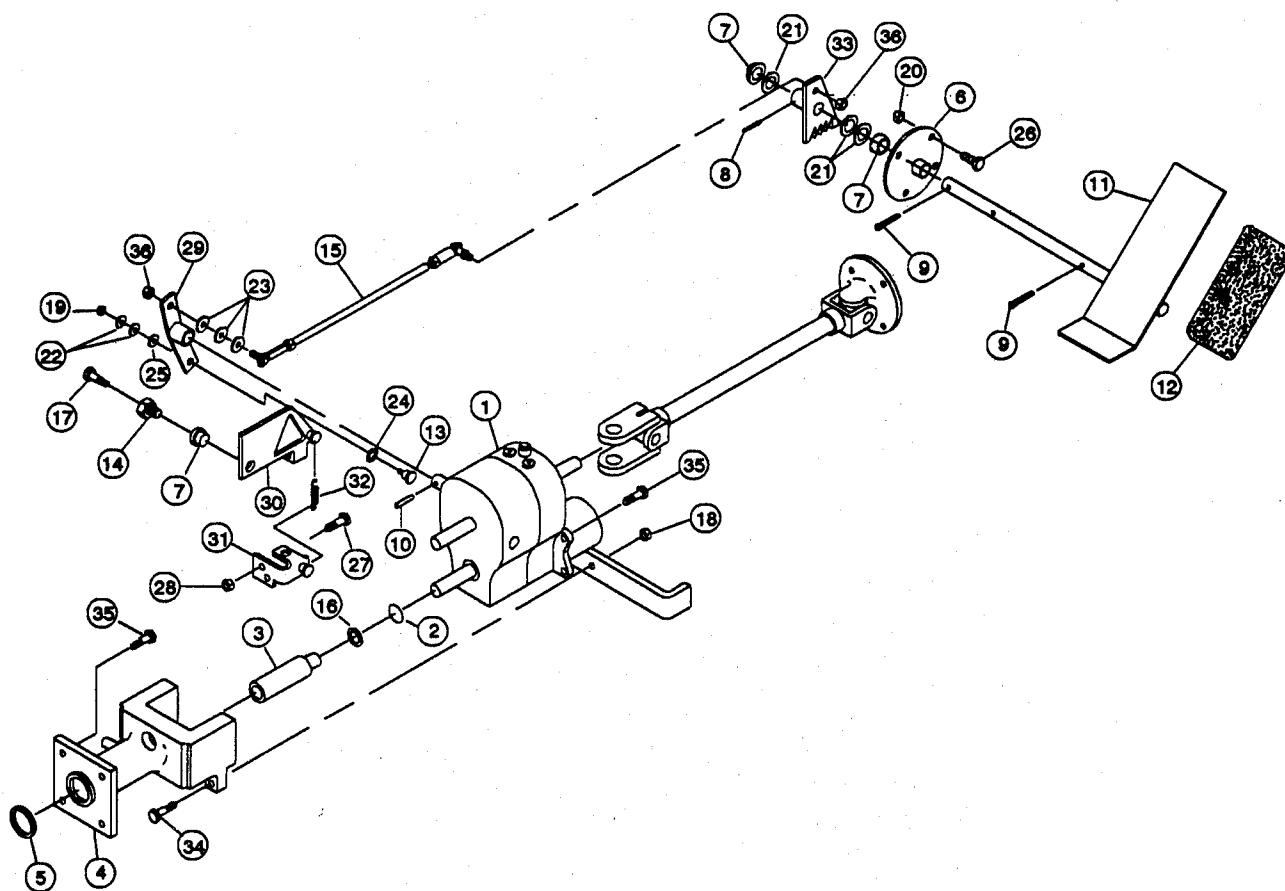
Hydrostatic drive

ITEM NO.	PART NO.	QTY	PART NAME	DESCRIPTION
1	03-7500-00	1	Transmission	Hydrostatic M/L
2	82-0299-00	1	Seal	O Ring 2.987 ID x .103
3	01-0914-00	1	Coupling	Hydrostatic drive shaft
4	01-7503-00	1	Tube	Torque-Hydrostatic drive
5	82-0152-00	1	Seal	1-1/2 Shaft x 1.878 OD
6	102153	1	Plate	Hydro control bushing
7	80-0015-00	3	Bushing	Flanged 3/4 ID x 1/2" lg.
8	84-4027-00	1	Pin	Drive 5/16 x 1-3/8 lg.
9	10330	2	Pin	Cotter 1/8 x 1 lg.
10	84-4050-00	1	Pin	1/4 dia. x 1-1/2 lg. roll
11	102714	1	Pedal	Control weldment
12	101452	1	Pad	Grit, hydro control pedal
13	80-0018-00	1	Bearing	5/8 dia. track follower
14	01-1701-00	1	Eccentric ...	Hydrostatic adjust
15	102608	1	Turnbuckle ..	Hydrostatic control
16	83-1037-00	1	Washer	Spring
17	84-2102-00	1	Screw	HHC 3/8 NC x 1-1/2
18	103124	2	Nut	Flange 3/8 NC serrated

ITEM NO.	PART NO.	QTY	PART NAME	DESCRIPTION
19	84-0009-00	1	Nut	Lock HX 1/4 NF
20	200183	4	Nut	Flange 1/4 NC serrated
21	84-3070-00	3	Washer	Flat, 3/4
22	84-3090-00	2	Washer	Flat, 1/4
23	84-3037-00	3	Washer	Flat, 3/8
24	84-3765-00	1	Washer	Lock INT/EXT 1/4
25	100163	1	Washer	Lock INT 1/4
26	102994	4	Screw	HWH 1/4 NC x 1
27	10285	2	Screw	HHC 5/16 NC x 1
28	102996	2	Nut	Flange 5/16 serrated
29	102162	1	Lever	Hydro trunnion control
30	102049	1	Control	Hydro weldment
31	102047	1	Bracket	Neutral switch
32	103137	1	Spring	Extension .500 x .063
33	103831	1	Ratchet	Weldment cruise
34	104190	2	Screw	HWH 3/8 NC x 1-1/2
35	103140	8	Screw	HWH 3/8 NC x 1.00
36	84-0110-00	2	Nut	Lock 3/8 NF

Parts Lists and Drawings

Hydrostatic drive



Parts Lists and Drawings

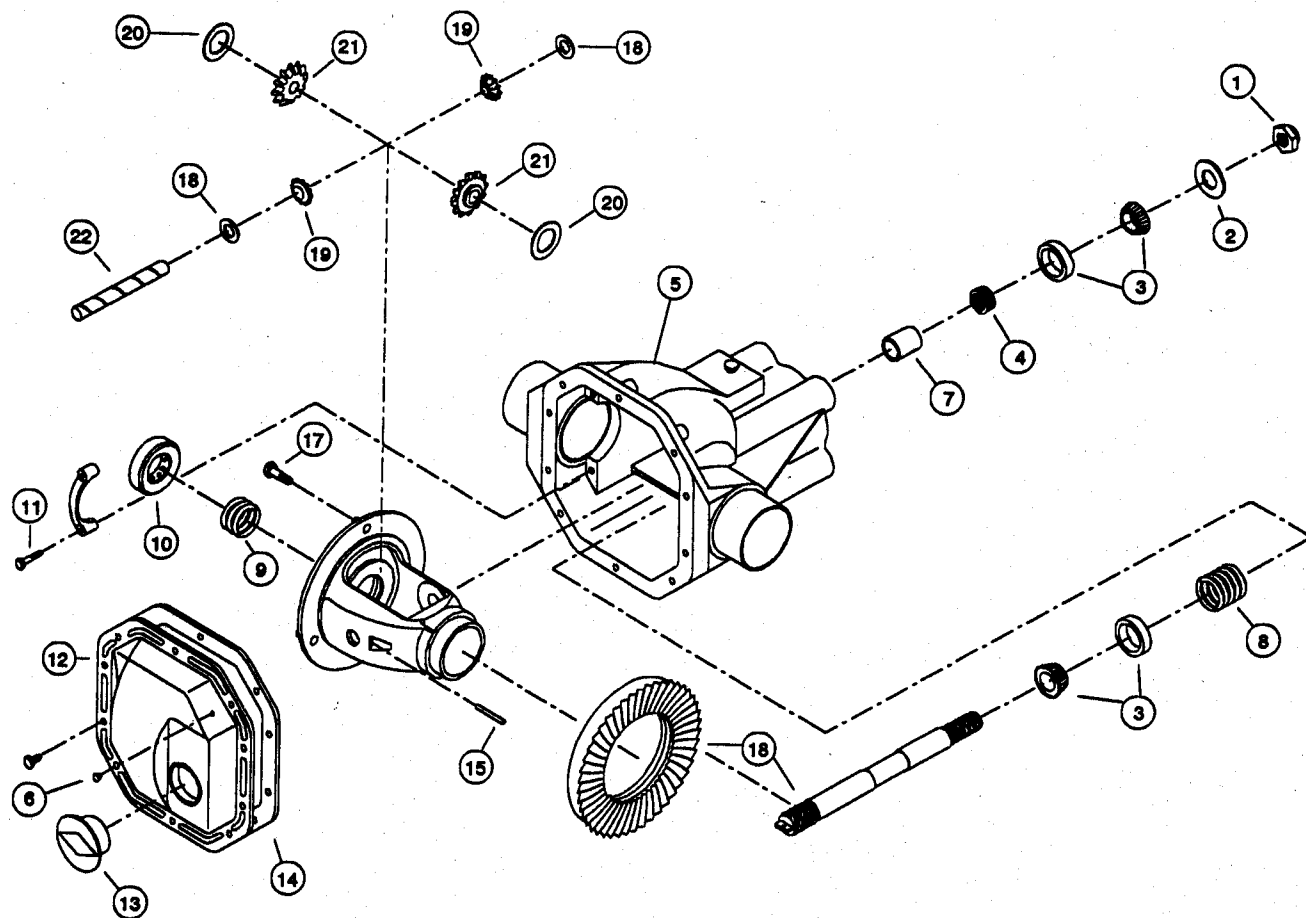
Differential

ITEM NO.	PART NO.	QTY	PART NAME	DESCRIPTION
1	09-9333	1	Nut	Pinion Shaft
2	09-9354	1	Slinger	Oil
3	09-9322	2	Bearing	Cup and cone
4	09-9347	4	Shim	Set, front pinion
5		1	Housing	Differential (not serviced)
6	09-9316	1	Plug	Vent
7	09-9356	1	Spacer	Pinion bearing
8	09-9348	4	Shim	Set, rear pinion shaft
9	09-9349	3	Shim	Set
10	09-9358	2	Bearing	Ball
11		4	Bolt	Bearing cap (not serviced)
12	09-9321	1	Assembly	Cover, differential

ITEM NO.	PART NO.	QTY	PART NAME	DESCRIPTION
13	09-9315	1	Plug	Cover
14		1	Gasket	Cover, use silicone sealer
15		1	Pin	Groove (not serviced)
16	09-9334	1	Assembly	Gear & pinion, 5.17 :1 ratio
17	09-9346	3	Screw	Drive gear
18	09-9341	2	Washer	Pinion
19	09-9338	2	Mate	Pinion
20	09-9353	2	Washer	Thrust side gear
21	104328	2	Gear	Side 24 T
22	09-9340	1	Shaft	Pinion mate
23	102205	1	Differential	Complete assembly
24	98-4006	2	Lube	Pints, 80/90 gear

Parts Lists and Drawings

Differential



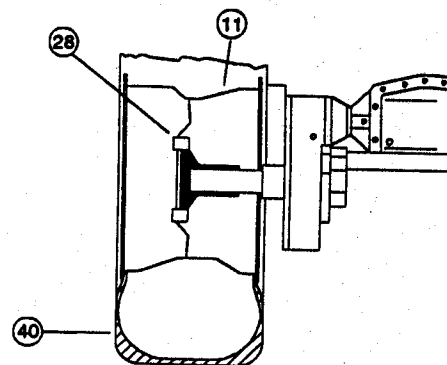
Parts Lists and Drawings

Final drive

ITEM NO.	PART NO.	QTY	PART NAME	DESCRIPTION
1	01-0105	2	Axle	Rear wheel
2	01-1000	1	Case	Gear, right hand
(2)	01-1003	1	Case	Gear, left hand
3	01-1002	2	Cover	Gear case
4	01-1303	2	Drum	Brake, 3-29/32 OD
5	01-2502	2	Gear	Side, 109 teeth
6	01-2515	2	Gasket	Side cover
7	01-2916	2	Hub	6 hole, rear wheels
8	01-2940	1	Housing	Bearing, right side
(8)	01-2941	1	Housing	Bearing, left side
9	102001	1	Shaft	Pinion, left side, 16 teeth
(9)	102002	1	Shaft	Pinion, right side, 16 teeth
10	102205	1	Differential	5.17 : 1, alum housing
11	03-8707	2	Wheel	Rear, 6 x 16
(11)	017540	2	Wheel & Tire ...	Rear, 15, 13-1/2 turf tread tire
12	23-6301	2	Plug	Pipe, 1/4 vented
13	23-6302	4	Plug	Pipe, 1/4 solid
14	101032	2	Seal	Pinion
15	80-0006	4	Bearing	Roller, B1612
16	80-0010	2	Bearing	Cover, axle bearing
17	80-0012	2	Bearing	Case, axle bearing
18	82-0100	4	Seal	1 ID x 1-1/4 OD x 1/8 W
19	101094	2	Seal	1-1/2 ID x 1-7/8 OD
20	84-0062	2	Nut	5/8-11 hex, 45 degree

ITEM NO.	PART NO.	QTY	PART NAME	DESCRIPTION
21	84-0072	2	Nut	1/4 NC, hex
22	102998	12	Nut	7/16 NC, hex flange
23	84-1024	6	Bolt	Carriage, 7/16 NC x 5
24	84-2170	6	Screw	7/16 NF x 1-1/2, HHC
25	104192	2	Screw	7/16 NC x 5-1/2, HHC
26	104193	4	Screw	7/16 NC x 4, HHC
27	84-2240	2	Screw	7/16 NF x 1-1/2, SHC
28	84-2250	12	Screw	1/2 NF x 1-1/16 Spec.
29	84-3031	2	Washer	7/16 High-collar, lock
30	84-3075	2	Washer	Lock, internal tooth
31	84-3762	4	Washer	Thrust, 1-1/2 ID x 2-3/4 OD
32	103220	4	Key	Square, 3/8 x 1-1/2 long
33	84-4017	4	Pin	Dowel, 1/4 dia. x 1/2 long
34	84-1166	2	Pin	Hitch, 5/8 dia. x 1-7/16 lg.
35	84-4042	2	Key	Woodruff #9
36	85-0150	8	Ring	Snap, 1-1/2 external
37	84-3030	6	Washer	Lock, 7/16
38	80-0038	4	Bearing	Thrust race
39	84-4052	2	Pin	Drive, 1/4 dia. x 2-1/4 long
40		2	Tire	Lug, 8.0-16 2-ply
(40)		2	Tire	Lug, 8.3-16 4-ply
(40)		2	Tire	Lawn, 8.0-16 2-ply
(40)		2	Tire	Turf, 13.5-15
41	83-1038	2	Washer	Wave
42	98-4006	3	Lube	Pints, 80/90 gear

Final drive



Parts Lists and Drawings

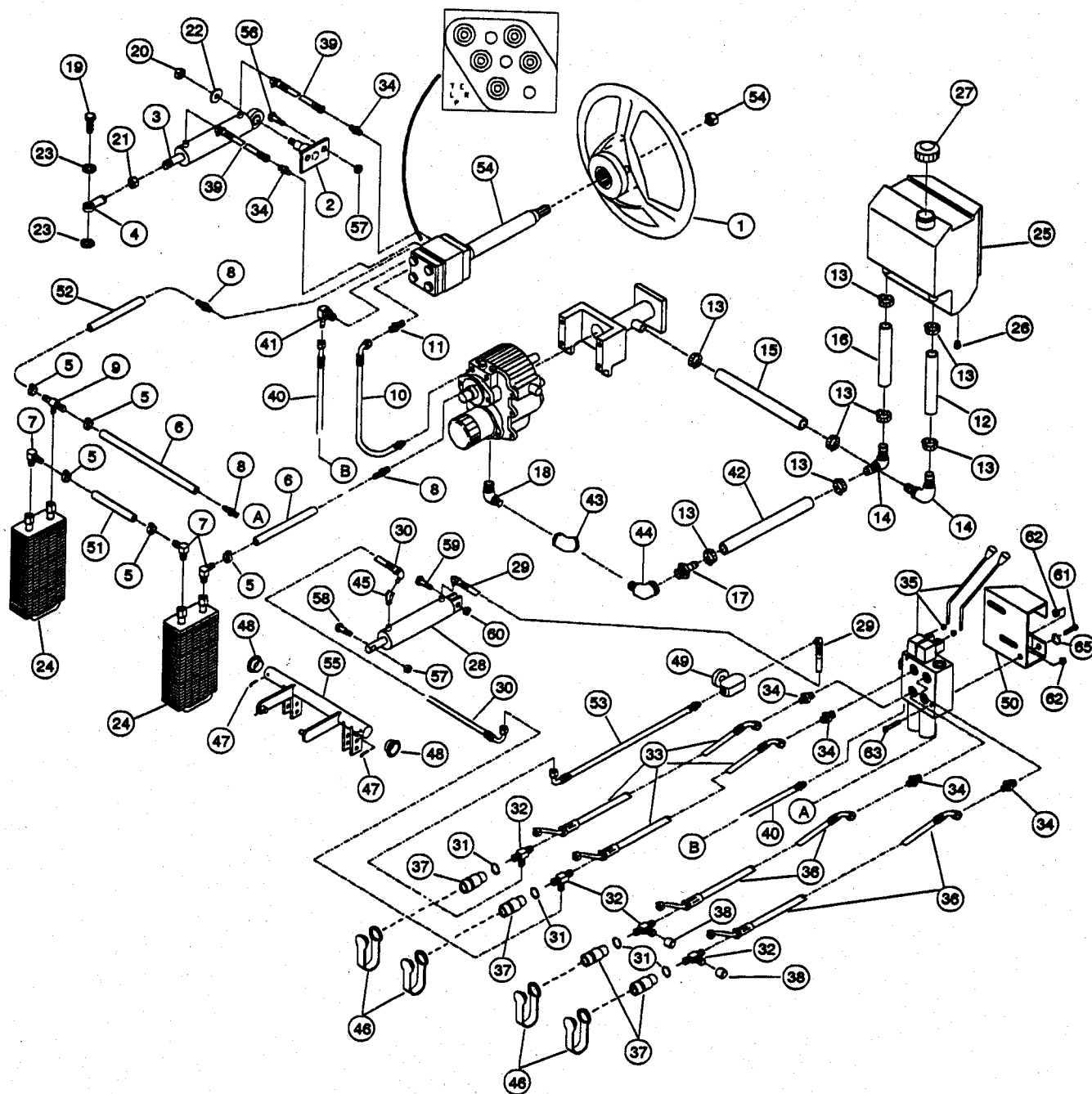
Hydraulic plumbing and power steering

ITEM NO.	PART NO.	QTY	PART NAME	DESCRIPTION
1	103941	1	Wheel	Steering
2	01-0526-00	1	Bracket	Cylinder-steering
3	23-0907-00	1	Cylinder	Power steering
4	03-4108-00	1	Rod End500 UNF
5	85-0040-00	5	Clamp	Hose 5/8" Clinch type
6	23-2917-00	2	Hose	3/8 low pressure x 22"
7	23-7932-00	3	Fitting	3/8 MP-3/8 Barb 90°
8	23-7929-00	3	Fitting	3/8 MB-3/8 Barb
9	104005	1	Fitting	3/8 M/P x 3/8 (x2)
10	103905	1	Hose	Pwr str P-transmission
11	103908	1	Fitting	3/8MB-3/8MJ
12	23-2918-00	1	Hose	Stub 3/4 ID suction x 2-1/4
13	85-0043-00	8	Clamp	Hose
14	23-7935-00	2	Elbow	3/4" x 3/4" nylon
15	23-2909-00	1	Hose	3/4 Low pressure x 10"
16	23-2910-00	1	Hose	3/4 Low pressure x 6"
17	23-7909-00	1	Fitting	1/2 MP-3/4 Barb
18	23-7936-00	1	Fitting	5/8 MB-1/2FPS
19	84-1171-00	1	Screw	HHC 1/2 NF x 1-1/2
20	84-0130-00	1	Nut	Lock HX 1/2 NF
21	84-0132-00	1	Nut	Jam 1/2 NF
22	84-3059-00	1	Washer	Flat 1/2
23	84-3110-00	2	Washer	Lock 1/2 regular
24	01-0916-00	2	Cooler	Hydraulic-oil
25	23-7601-00	1	Tank	Hydraulic M85
26	23-6300-00	1	Plug	Drain-Hyd tank
27	23-7602-00	1	Cap	Hyd tank M85
28	23-0905-00	1	Cylinder	10.5 solidram 1/2 PI
29	104011	1	Hose	Needle VLV out-cyl rear
30	104010	1	Hose	UT ADAP 3-cyl front
31	102209	4	Ring	Snap .821 groove
32	102189	4	Fitting	1/4MP-3/8MJ-3/8MJ

ITEM NO.	PART NO.	QTY	PART NAME	DESCRIPTION
33	104009	2	Hose	Valve 2A/2B-UT Adap4/3
34	101981	6	Fitting	3/8 MB-1/4 MJ
35	103942	1	Valve	2-Spool
36	104007	2	Hose	Valve 1A/1B-UT Adap2/1
37	102192	4	Coupler	Quick disconnect 1/4F
38	102222	2	Cap	3/8 FJ
39	103998	2	Hose	PS cyl R/F-PS Gear L/R
40	103995	1	Hose	Cntrl valve in-pwr str E
41	101221	1	Fitting	3/8 MB-3/8 MJ 90°
42	23-2911-00	1	Hose	3/4 low pressure x 7-1/2"
43	102682	1	Fitting	1/2 MP-1/2 FPS 45
44	102681	1	Fitting	1/2 MP-1/2 FPS 90°
45	23-7914-00	1	Fitting	3/8 MP-3/8 FP 45
46	102677	4	Plug	Dust, 1/4
47	84-4020-00	2	Key	Cotter 5/32 x 1-1/2
48	80-0014-00	2	Bushing	Flange 1-1/4 ID
49	102397	1	Valve	Needle 1/4"NPT F ports
50	103848	1	Bracket	Valve mounting
51	103973	1	Hose	3/8 low pressure x 16"
52	103974	1	Hose	3/8 low pressure x 9-1/2"
53	104013	1	Hose	UT ADAP 2/4 needle valve
54	101980	1	Gear	PWR steering Eaton
55	102506	1	Deck	Lift weldment
56	104194	2	Screw	HWH 7/16 NC x 1 1/4
57	102998	3	Nut	Flange 7/16 NC x 1-1/4
58	102522	1	Screw	HHC 7/16 NC x 2-1/4
59	84-2227-00	1	Screw	HHC 1/2 NC x 2-3/4
60	103395	1	Nut	Flange 1/2 NC serrated
61	104188	2	Screw	HWH 1/4 NC serrated
62	200183	4	Nut	Flange 1/4 NC serrated
63	10268	2	Screw	HHC 1/4 NC x 2-1/4
64	98-4001-00	18	Oil	Pints, VG46 or 20W hyd.
65	84-3090-00	2	Washer	Flat, 1/4 type N

Parts Lists and Drawings

Hydraulic plumbing and power steering



Parts Lists and Drawings

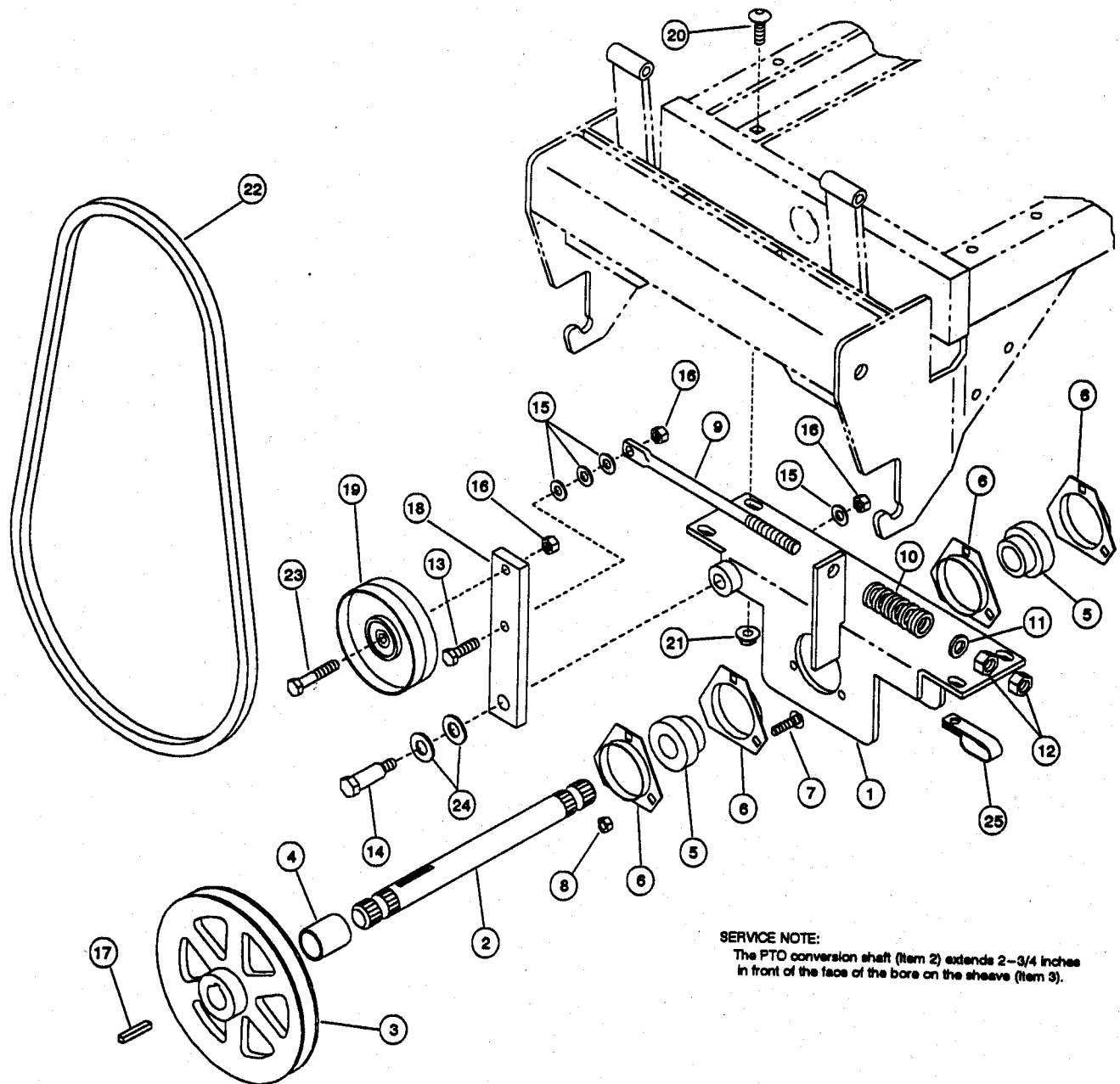
Power take off (PTO)

ITEM NO.	PART NO.	QTY	PART NAME	DESCRIPTION
1	104489	1	Bracket	PTO mounting
2	101505	1	Shaft	PTO conversion
3	101002	1	Sheave	Single groove
4	101506	1	Spacer	1.25 x12 ga w x 1
5	10227	2	Bearing	With collar
6	10279	4	Flange	3-hole bearing
7	10210	6	Bolt	Carriage 5/16" NC x 1
8	102996	6	Nut	Flange 5/16" NC Hx
9	101504	1	Rod	Tension-belt
10	83-1032-00	1	Spring	Compress 1.000 x .177
11	84-3061-00	1	Washer	Flat 1/2" type W
12	84-0050-00	2	Nut	Hx 1/2" NC
13	84-2100-00	1	Screw	HHC 3/8" NC x 1-3/4"

ITEM NO.	PART NO.	QTY	PART NAME	DESCRIPTION
14	104490	1	Bolt	Shoulder 1/2" x 1-1/2"
15	84-3037-00	4	Washer	Flat 3/8" type N
16	104491	3	Nut	Hx 3/8" NC Nylon lock
17	84-4006	1	Key	1/4" sq x 1-1/2"
18	104488	1	Bar	Idler arm
19	102235	1	Pulley	Idler 4.25" OD
20	84-1025	4	Bolt	Carriage 3/8" NC x 1
21	103124	4	Nut	Flange 3/8" NC serrated
22	102224	1	Belt	PTO
23	104492	1	Screw	HHC 3/8" NC x 2-1/4"
24	84-3059-00	2	Washer	Flat 1/2" type N
25	102190	3	Clamp	1/2" Double tube

Parts Lists and Drawings

Power take off (PTO)



SERVICE NOTE:

The PTO conversion shaft (item 2) extends 2-3/4 inches in front of the face of the bore on the sheave (item 3).

Parts Lists and Drawings

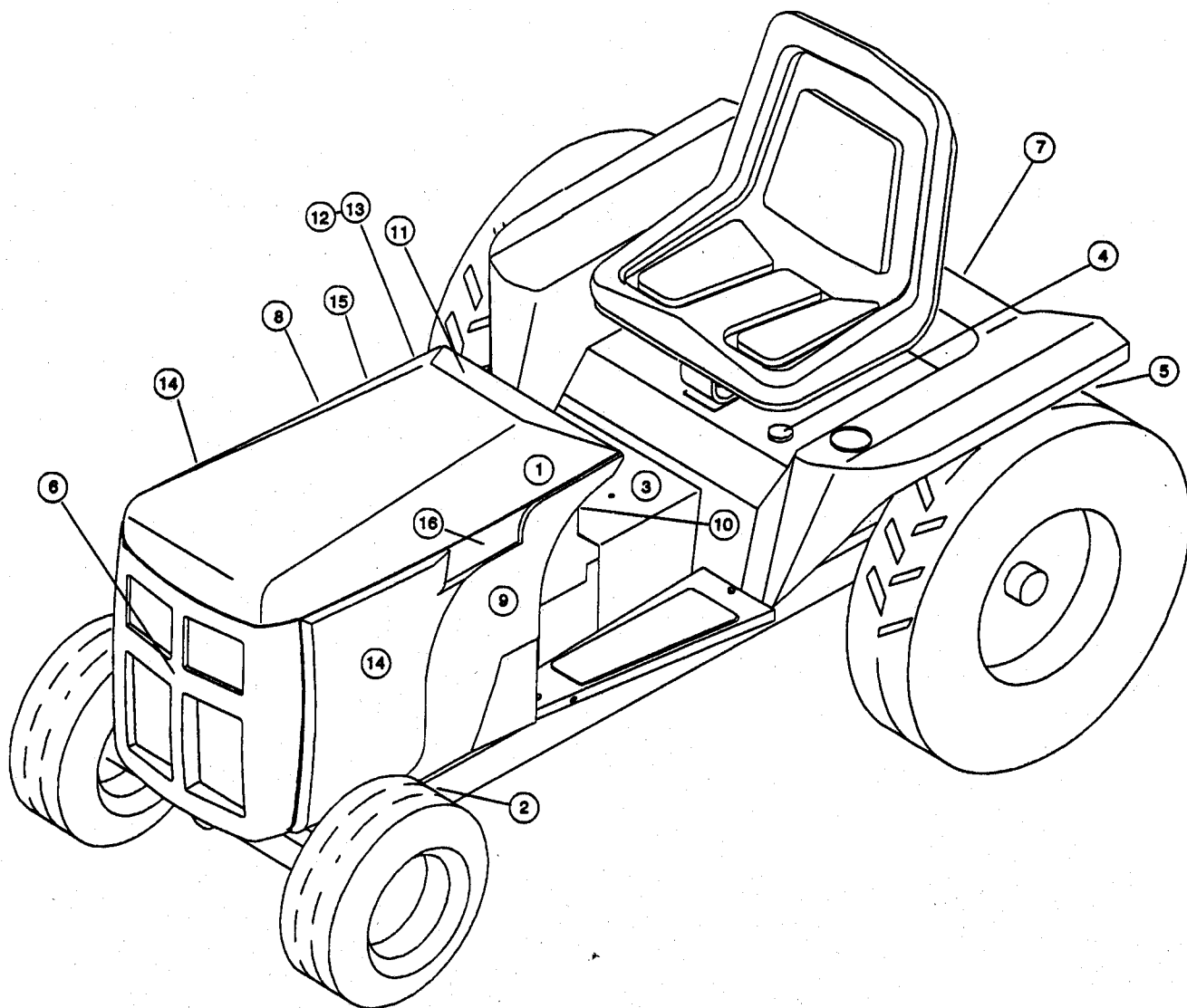
Decals

ITEM NO.	PART NO.	QTY	PART NAME	DESCRIPTION
1	98-6968-00	1	Decal	Caution baffle removal (Located under hood on engine baffle)
2	98-7023-00	2	Decal	Danger belt pulley
3	98-6943-00	1	Decal	Bypass valve
4	98-6975-00	1	Decal	Hydraulic oil only
5	98-6971-00	1	Decal	Warning 3-point hitch (Located on frame at rear of tractor)
6	104145	1	Emblem	Grille - UT620HV
(6)	104200	1	Emblem	Grille - UGT2060H
7	104146	1	Emblem	Fender rear - UT620HV
(7)	104216	1	Emblem	Fender rear - UGT2060H
8	104153	1	Decal	RH side panel - UT620HV
(8)	104214	1	Decal	RH side panel - UGT2060H
9	104154	1	Decal	LH side panel - UT620HV
(9)	104215	1	Decal	LH side panel - UGT2060H

ITEM NO.	PART NO.	QTY	PART NAME	DESCRIPTION
10	104155	1	Decal	Lower console - UT620HV
(10)	104203	1	Decal	Lower console - UGT2060H
11	104158	1	Decal	Upper console - UT620HV
(11)	104204	1	Decal	Upper console - UGT2060H
12	102632	1	Decal	Valve Direction (Located on right side of console)
13	102613	1	Decal	Shuttle and parking brake (Located on right side of console)
14	104407	2	Emblem	Side panel - UT620HV
15	104226	1	Decal	RH side panel - UGT2060H
16	104225	1	Decal	LH side panel - UGT2060H

Parts Lists and Drawings

Decals



Troubleshooting

Malfunction	Possible cause	Remedy
1. Engine will not turn over.	<ul style="list-style-type: none"> a. Improper starting. b. Dead battery. c. PTO clutch switch on. d. Operator not seated. e. Open electrical circuit. 	<ul style="list-style-type: none"> a. Check starting procedure. b. Charge battery or replace. c. Push PTO switch down. d. Sit in seat. e. Check for blown fuse, loose connections, broken wires or grounded leads.
2. Engine will turn over but will not start.	<ul style="list-style-type: none"> a. Empty fuel tank. b. Seat safety switch open. c. Fuel shutoff valve closed. d. Faulty spark plug. e. Faulty ignition connections. f. Air cleaner clogged. g. Engine flooded. (Strong fuel odor.) 	<ul style="list-style-type: none"> a. Fill tank. b. Operator must be seated. c. Open shutoff valve. d. Remove and check spark plug. e. Check for disconnected lead wires. f. Clean element. g. Push choke in and try to start again.
3. Engine starts but stalls in a few seconds.	<ul style="list-style-type: none"> a. Fuel tank empty. b. Fuel shutoff valve closed. c. Incorrect idle adjustment. d. Engine too cold. e. Drive train lubricants too cold. f. Faulty fuel relay. 	<ul style="list-style-type: none"> a. Fill tank. b. Open fuel shutoff valve. c. Adjust carburetor.* d. Leave choke partially pulled out until engine warms up. e. Run in neutral or use low gear setting until warm. f. Replace fuel relay.
4. Engine idles poorly.	<ul style="list-style-type: none"> a. Idle speed too slow. b. Idle fuel improperly adjusted. c. Faulty spark plug. 	<ul style="list-style-type: none"> a. Adjust idle speed.* b. Check idle fuel adjustment.* c. Check spark plug.
5. Engine overheats.	<ul style="list-style-type: none"> a. Engine screen or cooling fins clogged. b. Oil level too high or too low. c. Fuel mixture too lean. d. Engine overload. 	<ul style="list-style-type: none"> a. Clean out debris. b. Check oil level. c. Adjust carburetor.* d. Reduce load. Allow engine to cool.
6. Engine "Oil" pressure light on.	<ul style="list-style-type: none"> a. Low oil fill. b. Excessive slope operation. c. Engine not running. 	<ul style="list-style-type: none"> a. Check and add oil. b. See "Safety" section. c. Normal momentarily.
7. Engine continues to run when turned off.	<ul style="list-style-type: none"> a. Defective wiring or ignition switch. 	<ul style="list-style-type: none"> a. Pull choke knob out to flood engine. Check wiring and connections to engine. Check ignition switch circuit through switch.

*Refer to the engine manufacturer's Owner's Manual for more information.

Troubleshooting

Malfunction	Possible cause	Remedy
8. One or both headlights do not light.	<ul style="list-style-type: none"> a. Ignition switch off. b. Open electrical circuit. c. One or both lamps burned out. d. Dead battery. e. Loose connection or broken or grounded wire. f. Defective light switch. 	<ul style="list-style-type: none"> a. Turn ignition key to "ON". b. Check fuses. c. Replace bulbs. d. Charge battery or replace. e. Check wiring and connections between ignition switch, light switch, and lights. f. Replace light switch.
9. Electromagnetic clutch malfunction.	<ul style="list-style-type: none"> a. Loose connection. b. Out of adjustment. c. Defective PTO switch. d. Defective EMC. 	<ul style="list-style-type: none"> a. Check connections and fuses. b. Readjust. c. Replace switch. d. Replace EMC.
10. Tractor "creeps" when motion control foot pedal is in neutral position.	<ul style="list-style-type: none"> a. Linkage out of adjustment. 	<ul style="list-style-type: none"> a. See your Dealer about adjustment.
11. Motion control foot pedal stays depressed when released.	<ul style="list-style-type: none"> a. Pedal return spring is weak or broken. b. Binding cam plate or linkage. 	<ul style="list-style-type: none"> a. Replace spring. b. Clean and lubricate.
12. Excessive differential or final drive noise.	<ul style="list-style-type: none"> a. Loss of lubricant. 	<ul style="list-style-type: none"> a. Add oil as required, check for leaks, and repair.
13. Brakes ineffective. (If brakes won't kill engine but do stop forward motion, they are normal.)	<ul style="list-style-type: none"> a. Out of adjustment. b. Worn brake band. c. Oil in brake band. 	<ul style="list-style-type: none"> a. Adjust brake at clevis. b. Replace. c. Clean or replace.
14. Hydraulic lift does not work properly.	<ul style="list-style-type: none"> a. Low oil level. b. Worn hydraulic valve, hydraulic lift cylinder, or transmission charge pump. c. Pinched or broken hose. 	<ul style="list-style-type: none"> a. Check oil level and fill to 3" from top. b. See Dealer for replacement. c. Correct or replace.
15. No power steering.	<ul style="list-style-type: none"> a. Worn power steering unit. b. Worn power steering cylinder. c. Worn transmission charge pump. d. Low oil level. e. Pinched or broken hose. 	<ul style="list-style-type: none"> a. See Dealer for replacement. b. See Dealer for replacement. c. See Dealer for replacement. d. Check and fill hydraulic tank to recommended level. e. Correct or replace.

Tractor Specifications

Tires:

Rear:	Lug, 2 ply	8.0-16 (31-3/4" o.d.)			
	Lug, 4 ply	8.3-16			
	Power Torque	(31-5/16" o.d.)			
	Lawn, 2 ply	8.0-16 (31-1/4" o.d.)			
	Turf, 4 ply rating			13.5-15 (30-3/4" o.d.)	
	Air Pressure	10 lbs.	18 lbs.	10 lbs.	10 lbs.
	Load Capacity/Tire	750 lbs.	850 lbs.	750 lbs.	595 lbs.
Front:	Rib, 4 ply	4.0-12 (20-1/4" o.d.)	4.0-12 (20-1/4" o.d.)	4.0-12 (20-1/4" o.d.)	
	Lawn, 2 ply			8-10 (19-1/2" o.d.)	
	Air Pressure	40 lbs.	40 lbs.	40 lbs.	12 lbs.
	Load Capacity/Tire	750 lbs.	750 lbs.	750 lbs.	1450 lbs.

Dimensions:

Length Overall	83"	83"	83"	83"
Wheelbase	57"	57"	57"	57"
Width	43-3/4"	44"	43-3/4"	54"
Tread, Rear	35-3/4"	35-3/4"	35-3/4"	41-1/2"
Tread, Front	36"	36"	36"	38-1/2"
Toe In	±1/4"	±1/4"	±1/4"	±1/4"
Tread Adjustment, Rear	±5-1/2"	±5-1/2"	±5-1/2"	0
Tread Adjustment, Front	0	0	0	0
Height (at steering wheel)	50"	50"	50"	50"
Clearance (ground to frame)	15-3/4"	15-3/4"	15-3/4"	15-3/4"
Turning Radius	43"	43"	43"	38"

Weight:

Base Tractor with Wheels	1041 lbs.	1049 lbs.	1027 lbs.	1081 lbs.
Wheel Weight, Rear, Pair	118 lbs.	118 lbs.	118 lbs.	N/A
Wheel Weight, Front, Pair	47 lbs.	47 lbs.	47 lbs.	N/A
Front End Weights	50 lbs. ea.	50 lbs. ea.	50 lbs. ea.	50 lbs. ea.

Ground speeds, mph (approx.):

Forward	0 to 7.4
Reverse	0 to 3.0

Capacities :

Fuel Tank	8.25 Gallons (approx.) — minimum 87 octane unleaded gasoline
Engine Crankcase	2 Quarts (approx.) — 10W30 year round above 32° (5W30 below 32°)
Differential	2 Pints (approx.) — 80/90 gear lube
Final Drive Cases	1.5 Pints each — 80/90 gear lube
Hydraulic Tank	2.25 Gallons — VG 46 or 20W hydraulic oil

All rights are reserved to make product improvements and to change specifications without notice or obligation.

Tractor Specifications

ENGINE: Kohler® Model CH20

- 20 hp, 32 ft/lb torque at 2500 rpm.
- Two opposed cylinders with 3.03" bore and 2.64" stroke.
- 38 cu. in. displacement.
- Four-cycle, air-cooled 15 amp negative ground battery ignition.
- Spin-on filter and Oil Sentry® light.

ELECTRICAL SYSTEM: (by Kohler) 12-volt starting motor, geared to engine flywheel. Three-position key switch, 15 amp flywheel-mounted alternator and rectifier-regulator supply 12-volt battery current. Batteries: 45 amp hr.

TRANSMISSION: (by KYB) Variable displacement hydrostatic. Displacement 16.4 cm³/rev.

DIFFERENTIAL: (by Dana Corp.) Hypoid. Reduction ratio 5.17:1.

FINAL DRIVE: Spur bull gear keyed to 1-½" diameter wheel axles. Reduction: 6.813:1.

ADJUSTABLE REAR TREAD WIDTH: By reversing wheel discs on hubs tread width may be changed. See Dimension Table for maximum adjustments.

POWER STEERING: Eaton Mini-Series 291 Steering Control Unit. Maximum System Pressure: 1000 PSI [70 bar]. Maximum operating temperature: 200° F [93° C].

BRAKES: Cast drum and band. Individual or combined actuation. Parking brake latch.

FRAME: Welded construction. Front wheel support bar 1" x 3" solid steel; pivots on 1-½" diameter pivot stud and two bushings.

POWER TAKEOFF: Electromagnetic clutch on front of engine drives the front PTO for mower, snowblower, broom, etc.

All rights are reserved to make improvements and to change product specifications without notice or obligation.

Serial Number and Ordering Parts

Serial number

The serial number of your tractor is located on the right-hand side of the frame as shown in the following diagram. Record it in the space provided below.

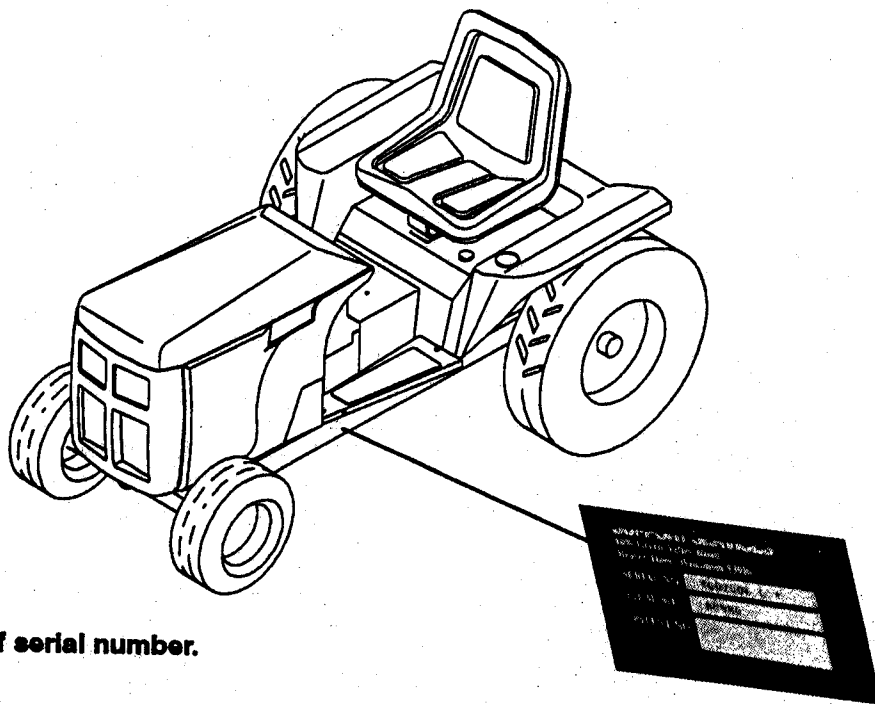


Figure 21. Location of serial number.

Ordering parts

When ordering parts it is necessary to provide the following information. Record your tractor's serial number in the space provided.

- Model number UT620HV/UGT2060H
- Serial number _____
- Part number _____
- Part name _____
- Part quantity _____

Maintenance Record

Use the following chart as a reference for doing maintenance and to record the dates when your tractor is serviced. The service intervals are recommended maximums and should not be exceeded. Perform maintenance more often under severe or unusual operating conditions.

Number of tractor (hourmeter) hours

√ – check ♦ – clean ⊕ – change	Before/ during every use	After initial 5 hours	25	50	75	100
Air cleaner	√		♦	♦	♦	⊕
Air intake screens	√ ♦					
Air intake/cooling system						♦
Battery		√	√	√	√	√
Belt(s)	√					
Brakes			√	√	√	√
Connections & wiring (electrical)			√	√	√	√
Differential						√
Engine oil	√	⊕				⊕
Engine oil filter		⊕				⊕
Fasteners, guards, shields	√					
Final drive						√
Fittings (grease)		√	√	√	√	√
Fuel level	√					
Fuel screen/filter						♦ ⊕
Hoses & fittings			√	√	√	√
Hydraulic oil	√					
Hydraulic oil coolers	√					
Hydraulic oil filter						⊕
Spark plugs						√
Tire pressure			√	√	√	√
Wheel bearings						♦ pack



TWO YEAR LIMITED WARRANTY

Snapper, through any authorized Snapper dealer, will replace, free of charge, any part or parts found upon examination by the factory, to be defective in material or workmanship or both, as follows:

- For two (2) years from purchase date for the original purchaser's residential, non-commercial use.
- For one (1) year from purchase date for the original purchaser's commercial, rental, or other non-residential use.
- For one (1) year from purchase date for any dealer tractor used for demonstration.

All transportation costs incurred by the purchaser in submitting material to the Snapper dealer for replacement under this warranty must be paid by the purchaser.

This warranty does not apply to parts that have been damaged by accident, alteration, abuse, improper lubrication, normal wear, or other cause beyond Snapper's control, nor does it cover accessories, attachments or components warranted by others, including: Engine & Engine Parts warranted by Kohler Co.; Snow Blower "Header" assemblies warranted by Haban Manufacturing Company; and Tires warranted by Goodyear Tire & Rubber Co.

There is no other express warranty.

Implied warranties, including those of merchantability and fitness for a particular purpose, are limited to two (2) years from purchase date for the original purchaser's residential, non-commercial use [one (1) year from purchase for the original purchaser's commercial, rental, or other non-residential use, and one (1) year from purchase date for dealer demonstration tractors] and to the extent permitted by law, any and all implied warranties are excluded. This is the exclusive remedy. Liabilities for incidental and consequential damages, under any and all warranties, are excluded.

Some states do not allow limitations on how long an implied warranty lasts, and/or do not allow the exclusion or limitation of incidental and consequential damages, so the above limitation and exclusion may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

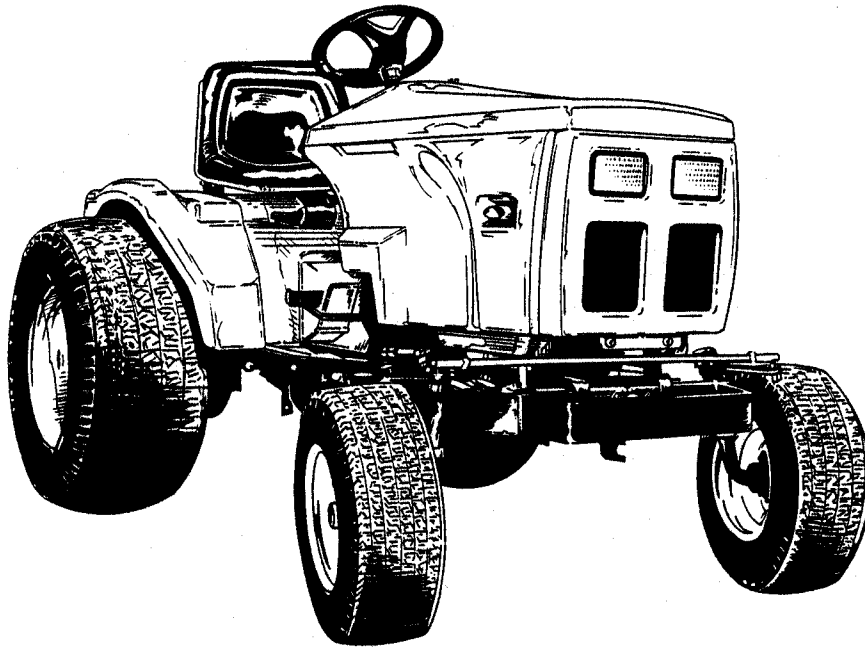
WARNING: THE USE OF REPLACEMENT PARTS OTHER THAN GENUINE SNAPPER PARTS MAY IMPAIR THE SAFETY OF SNAPPER PRODUCTS AND WILL VOID ANY LIABILITY AND WARRANTY BY SNAPPER ASSOCIATED WITH THE USE OF SUCH PARTS.

IMPORTANT: Please fill out the attached Snapper Product Registration Card immediately and mail to the address on the Product Registration Card.

Safety Instructions & Operator's Manual

SNAPPER®

**MODEL UGT2060H
GARDEN
TRACTOR**



SNAPPER® McDonough, GA., 30253 U.S.A.